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Editorial

Polio – A Crippling Reality

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Pakistan is one of the four remaining polio-endemic countries. We are a priority country for the Global Polio Eradication initiative for the simple reason that Pakistan is now reporting more cases than those of the other three endemic countries Nigeria, India and Afghanistan put together.

The vast majority of countries in the world are polio free, and for the first time ever, India has had only one case of polio this year. In contrast, Pakistan has recorded 198 polio cases in 2011 - a significant increase compared to cases reported in 2010. Not only has this been an issue internally, but persistent polio in Pakistan places neighbouring countries at risk. New cases in China this year are genetically linked to transmission in Pakistan. All of this underscores the need for reflection.

Pakistan has been working for more than a decade to eliminate polio, a disease that threatens our children with lifelong paralysis and even death. Most of us have seen the disease's devastating effects firsthand and inspired by this, we have made enormous progress. The fight to end polio in Pakistan has never been easy. Violence and insecurity, recent disasters and significant population movements continue to pose challenges that are difficult to overcome and are compounded by issues related to governance and oversight.

Yet despite these obstacles, I remain confident that we can eradicate this terrible disease. New strategies have the potential to reinvigorate eradication efforts. Ulema are working to convince families to immunise their children and this has led to a drop in refusal rates. Women health workers are going door-to-door to ensure that children receive polio vaccines. Paediatricians, family physicians and leading partners like UNICEF, WHO, Rotary Pakistan and others are educating families about this disease through seminars and advocacy.

The worst statistics of polio came from the most troubled province, Balochistan, where 74 cases were registered, 23 cases in KPK, 58 cases in FATA, 01 in Gilgit Baltistan, 33 in Sindh and 09 in Punjab in 2011.

Experts believe several factors, war on the terror in the tribal areas, conservative Pushtoon culture, undocumented cross border as well as within the country, movement of people and ineffective programme management – have stood in the way of complete reduction. They believe that Pakistan needs to re-strategize its Polio campaign to achieve the target of Polio-free Pakistan by 2012. We need to develop a sense of honourship among the vaccinators and other staff members involved in the campaign says, Dr. Hanif Khelji Chief Coordinator of the Rotary Club's Polio Reduction in Balochistan.

Dr. Elias Durry, senior coordinator for the WHO's Polio eradication effort in Pakistan, is also of the view that mismanagement in the main cause of spread of polio in Pakistan without going into details, he says, the fact that the highest risk areas are Quetta and Karachi – both provincial capitals proves inaccessibility is not the major cause for spread of polio.

Durry says, WHO provides technical and financial support to Pakistan to implement the National Emergency Action Plan. Right now it's struggling hard to meet the target of vaccinating at least 95% children.

About surge in the polio cases in Pakistan, Dr. Deborah Bettles MO, WHO Punjab said there might be multiple factors like improper handling, transportation and storage of the vaccine, poor hygienic and sanitation conditions, environmental problems un-skilled staff deputed for campaign etc. Another major factor, she said, might be the missing children, who remained un-vaccinated during repeated visits of the vaccination teams. She also emphasized on comprehensive surveillance system, complete doses of vaccination to each and every child and hiring of trained and skilled staff for immunizations.

Mr. Rustim Hoydarovr UNICEF Communication Specialist said the large number of children who remained unvaccinated during each official campaign was at more risk for the polio virus. He said some parents refused vaccination of their children below the age of 40 days. As many polio cases occurred in first 12 months, he said, the OPV must be given immediately after birth. Pakistani media being the major pillar of state has both moral and professional responsibility to ensure that polio eradication is set on top of public agenda.

Pakistan has informally been warned by the World Health Organization (WHO) to control spreading of the Polio, otherwise it would be placed among the countries on watch where the international travelers visiting or coming out of it would be required to inform to the organization under world-body about their movement. Prime Minister Syed Yosuf Raza Gilani has taken the warning seriously and he is asking the relevant officials to evolve line of action to ward off the upcoming threat. The disease has already been eliminated in most parts of the world. Margaret Chan, Director General WHO, who had detailed meeting with Prime Minister Gilani in Davos. The WHO chief briefed Gilani about the apprehensions of the WHO about the lackluster attitude

of some officials and system in Pakistan in controlling and eliminating such disease.

The WHO Director General explained Prime Minister Gilani that her organization and world at large are not interested to create troubles for Pakistan but they would be constrained to impose restrictions regarding Pakistan including on the people who will be visiting Pakistan and coming from there. Such people will have to undergo process of immunization and tests for not being effected from certain diseases. Few countries of Africa are currently facing such restrictions. The cumbersome procedure in question could damage not only the image of Pakistan but cause restrictions on the travelers and that would hamper economic activities with Pakistan and in the country, the sources reminded.

Chairman of Bill Gates Corporation who has contributed a hefty amount on behalf of his charity foundation for destroying polio from Pakistan was also concerned about the existence of polio in Pakistan. Prime Minister Gilani also had a meeting with Bill Gates separately in Davos. The Prime Minister who was assisted by his two ministers Ms. Hina Rabbani Khar and Senator Hafeez Sheikh briefed his distinguished interlocutors about the efforts of the government of Pakistan for stamping out the diseases from Pakistan and difficulties coming in the way of campaigns for immunization in different parts of the country due to obsolete customs and illiteracy.

Improved vaccines and technical innovations also offer unique opportunities to maximize gains from immunization strategies. To help bolster these efforts, international partners, including Rotary international, UNICEF, WHO, Government of Japan and Bill & Melinda Gates Foundation, have lent their leadership and funding to give children in Pakistan and the world the chance to be protected from polio.

Yet these advances are not enough to finish the job. We also need commitment and skilled execution at all levels, from our heads of government to local health workers. We need a civic society movement to create demand and ensure accountability. Polio eradication in Pakistan should not be a matter for the government alone, but a truly shared responsibility. Once this disease is eradicated, we will no longer need to treat children who would have been paralyzed by the virus. This will allow us to save precious resources and health worker time, as well as invest funds in other maternal and child health priorities.

The solutions are at hand. The political will to eliminate polio at the highest levels of government must be translated into tangible, concrete action at the grassroots level with ruthless accountability. If we seize these opportunities - and allocate the time, attention and resources needed - then we can finally eliminate polio in Pakistan. In recent decades, polio cases have decreased by 99% globally, with fewer than 1,500 cases last year. We are close to making this disease only the second ever to be eliminated, after smallpox. Pakistan can help achieve this historic victory.

Pakistanis have a time-limited opportunity to end polio forever. Safe, effective and affordable polio vaccines have allowed us to get this far in the fight. Our progress proves the value that vaccines provide for our children in Pakistan and around the world. I encourage all parents to take their children to be vaccinated against polio and other life-threatening diseases. Please also encourage your friends, neighbours and family members to do the same. Vaccines can protect your children against disease for a lifetime.

For eradication of Polio we should stress on strengthened routine vaccination of all kinds including Polio. There should be legislation about compulsory immunization and bill should be passed through National Assembly. Birth certificates should not issued without vaccination cards. The Union Council Secretaries would play important role in this regard. Before the campaign there should be registration of all primary schools at UC level and their children under five years.

There will be full involvement of the district governments. Involvement of community at all levels like, parliamentarians, political leaders, Religious leaders, Allied and Aline departments, Scouts, NGOs, primary school teachers, private hospitals, Health healers, Hakeems, Homeopaths, Doctors Associations, Family Physicians, Paedriatians (govt. and private), Gynaecologists (govt. and private), All teaching hospitals (govt. and private), GPs, Ex-Nazims, Imam of mosques, School Health Nutrition Supervisors and female councilors at grass root level. Special concentration should be given in Polio campaigns on Nomadic children, on Moving children, on different Markets and Bazaars, Multistory buildings in urban areas. Before every campaign Macro and Micro planning should be revised. Due and Defaulter lists should be prepared before every campaign. Special teams should be deployed for hard to reach areas, security compromised areas, markets, bazars, and multi story buildings. Before the campaign social mobilization through print media, electronic media, cables and through advocacy seminars should be conducted. Area incharges in the polio campaign should be increased, one area incharge deputed for two to three teams only.

Pakistan needs to put its entire organizational shoulder to the Polio eradication wheel on an emergency basis. So long as a single child remains infected with Polio, the global goal of eradication will not be met. While at it, we must also look inwards to put in place critically needed health system reforms, which will be vital for meeting any development target in Pakistan.

This (Polio) is the crippling reality that we face on ground. The Health of the nation is clearly not well.

Original Article

Role of Vitamin E & Vitamin C as Antioxidants in Parkinson's disease: A Community Based Study In Urban Areas of Karachi

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ABSTRACT

Objective: Pharmacological studies of vitamin E and vitamin C as antioxidants in patients with Parkinson's disease.
Design of study: Randomized, comparative and categorical study.
Place and Duration of Study: This study was conducted in the Department of Pharmocology, Faculty of Pharmacy, University of Karachi in collaboration with Jinnah Post Graduate Medical College Hospital and Mamji Hospital from April 11, 2010 to August, 2010.
Materials and Methods: On enrollment each patient received complete physical examination and laboratory tests were performed. All registered patients were advised to attend the respective outpatient department (OPDs) every week and at the end of 3rd month at a special counter allocated for the purpose of this study. Evaluation of the subjects was done on Patients Health Questionnaire and Unified Parkinson's disease Rating Scale (UPDRS).
Results: Patients responded to this combination in a very energizing way making them more active, less depressed and motivated. In some patients who were younger around age of 43 (as compared to others ≤ 65 years) diseases free period duration increased to two folds. Some male patients found this combination very aphrodisiac Statistical analysis confirms the promising future of Antioxidants in patients with Parkinson's disease (PD).
Conclusion: Antioxidants in combination must be given to Parkinson's patients in order to improve the quality of life. Especially at the early stages of Parkinson's disease worsening of symptoms can be prevented or prolonged.
Key Words: Oxidative stress, Parkinson's diseases, tremors, vitamin E, vitamin C.

INTRODUCTION

It is an established fact that aging brings many changes at neuronal level which are further progresses in the presence of neurodegenerative diseases like Parkinson's disease , Alzheimer's diseases and lateral sclerosis. These changes may be seen in the form of alteration in calcium homeostasis, [1] sensitivity of adrenergic, [2] and dopamine [3-6] and opium [7-8] receptors [3].All these changes are further seen in disturbances in motor [9-10] and cognitive functions [11].A great deal of research has suggested that these decline result due to the absence of effective antioxidants defense system which increases oxidative stress and it is particularly evident in diseases like Parkinson's [12] and Alzheimer's disease[6-13].

Parkinson's disease: Parkinson's disease is a movement disorder, though it bears cognitive difficulties[14]. It is the second most prevalent neurodegenerative disorder after Alzheimer's disease. In industrialized countries its occurrence is 0.3% in the whole population and increases to 1% in those over 60 years of age and to 4% among individuals 80 years and above[15]. The mean age of onset is around 60 years, although 5–10% of cases, classified as young onset, begin between the ages of 20 and 50 years[14]. Some studies have proposed that it is more common in men than women, but others have failed to detect any such differences between the two sexes. The basal ganglia which are innervated by the dopaminergic system are the most seriously affected brain areas in PD [16].

The symptoms of PD arise after the death of cells in pars compacta region of the substantia nigra that produces dopamine[16]. The most characteristic pathological finding in PD is a progressive accumulation of Lewy bodies in the substantia nigra and several other brain regions. A diagnosis of Parkinson's disease is usually made based on the medical history and neurological examination. The physician conducts an interview, looking for cardinal motor symptoms, while attending to other possible symptoms that would exclude a diagnosis of PD [17]. Neurofibrillary tangles are present in affected areas of brain while dementia occurs at advanced stage [18]. Parkinson's disease includes motor and non-motor symptoms. Non-motor symptoms include autonomic dysfunction, difficulties in sleep, sensory disturbance, cognitive and behavioral problems (neuropsychiatric). Tremor, rigidity, slowness of movement and postural instability are considered cardinal in PD while tremors are most noticeable. Cognitive symptoms usually appear as the disease progresses but may appear in many cases years before diagnosis of the disease [17].There is no cure for Parkinson's disease, but medications, surgery and multidisciplinary management can provide relief from the symptoms.

Vitamin C: Vitamin C is a potent antioxidant and works as an electron donor, it is this property which accounts for its most beneficial characteristic.Human

diseases such as atherosclerosis and cancer might occur in part from oxidant damage to tissues.[19]

Vitamin C is essential for a healthy diet as it lowers oxidative stress and work as potent antioxidant. It serves as enzyme cofactor and electron donor for important enzymes.[20] Ascorbic acid performs numerous physiological functions in the human body. These functions include synthesis of collagen, carnitine and neurotransmitters; the synthesis and catabolism of tyrosine; and the metabolism of microsome.[21] During biosynthesis, ascorbate acts as a reducing agent by donating electrons and preventing oxidation so as to keep iron and copper atoms in their reduced states. Vitamin C acts as an electron donor for eight different enzymes.[20] Vitamin C functions as an antioxidant and is necessary for the treatment and prevention of scurvy, though in nearly all cases dietary intake is adequate to prevent deficiency and supplementation is not necessary.[21-22]

Vitamin E: The specific function of α-tocopherol is to protect long chain polyunsaturated fatty acids and thus maintain their concentrations for important signaling events.Vitamin E is the collective name for a group of fat-soluble compounds with distinctive antioxidant activities. Unshared electrons are highly energetic and react rapidly with oxygen to form reactive oxygen species (ROS). The body forms reactive oxygen species endogenously when it converts food to energy and antioxidants might protect cells from the damaging effects of reactive oxygen species. The body is also exposed to free radicals from environmental exposures, such as cigarette smoke, air pollution and ultraviolet radiation from the sun. In addition to its activities as an antioxidant, vitamin E is involved in immune function, cell signaling, regulation of gene expression and other metabolic processes. [23-24] Alpha-tocopherol inhibits the activity of protein kinase C, an enzyme involved in cell proliferation and differentiation of smooth muscle cells, platelets and monocytes. Vitamin-E–replete endothelial cells lining the interior surface of blood vessels and are better able to resist blood-cell components that adheres to this surface. Keeping in view the importance of antioxidants, the study is planned to observe the effects of antioxidants in combinations to patients with Parkinson's diseases.

MATERIALS AND METHODS

The study was conducted in Out Patient Department of Jinnah Post Graduate Medical College Hospital and Maamji Hospital on 25 out of 100 Patients diagnosed with Parkinson's disease. The proposed study was spread over a period of 12 weeks. All the patients fulfilling the following inclusion and exclusion criteria were selected after taking the written consent.

Inclusion Criteria: Male and female outpatients aged between 50-75 years.

The patients must be receiving anti-Parkinson's disease medications confirming earlier diagnosis of PD.

No History of other Neurodegenerative/Motor disease other than PD.

Drugs and vitamins bio availability must be reproducible.

Patient's family members were available for feedback.

History of patient was available in Hospital.

Dietary assessment was possible.

Exclusion Criteria: History of substance abuse/ disorder within last 6 months which affects neuronal/motor functions**.**

Presence of any other neurodegenerative disease other than Parkinson's disease.

Patient who displayed any medical illness that would compromise their safety or interfere with implementations of the protocol or interpretation of study results.

Patients not reachable or out of city residents.

Unreliable answers from patients and family members regarding dietary assessment.

Subject Recruitment: The criteria for diagnoses of PD are the core signs and symptoms, movement-related, including shaking, rigidity, slowness of movement, and difficulty with walking and gait. Cognitive and behavioral problems with dementia are also considered. Other symptoms include sensory, sleep and emotional problems.

The subjects were recruited in OPD of JPMC and Maamji Hospital Karachi with the permission of Head of the departments and Ethical committee.25 patients were enrolled in this study. All received vitamin C 500 mg once daily and Vitamin E 400 IU capsule once daily which is the standard adult dose.

Table 1: Effects of Vitamin E & Vitamin C on UPDRS Subscale 1.

Sub scores	Possible Range of Scores	Baseline N=29	Three Months after dosage (N=29)	*P Value* Three Months after dosage Vs. Baseline
Motivation Behavior and Mood**:** 0-16				
Intellectual Impairment	0-4	1.0±0.0	0.862±0.350	0.0437
Thought disorder	0-4	0.276±0.702	0.138±0351	0.349
Depression	0-4	1.517±0.509	1.138±0.351	0.002**
Motivation/Initiation	0-4	1.06±0.651	1.138±0.351	0.50

Values are mean + S.D (n=29).Significant difference by Newman-Keuls test.

p<0.05,**p<0.01,p<0.001 compared to baseline ,following Student's t-test.**

Table 2: Effects of Vitamin E and Vitamin C on UPDRS Sub scale 3

Sub scores	Possible Range of Scores	Baseline N=11	Three Months after dosage N=11	*P Value* Three Months after dosage Vs. Baseline
Motor Examination: 0-56				
Speech	0-4	1.448±0.506	1.310±0.471	0.287
Facial Expression	0-4	1.552±0.506	2.00±0.535	0.00***
Tremors at Rest	0-4	2.621±0.494	0.276±0.455	0.00***
Action or postural Tremors	0-4	2.172±0.384	1.517±0.738	0.00***
Rigidity	0-4	2.276±0.702	1.828±0.658	0.015***
Finger Taps	0-4	1.832±0.351	1.379±0.494	0.00***
Hand movements	0-4	2.0±0.0	1.379±0.493	0.00***
Rapid Alternative Movement	0-4	1.724±0.455	1.241±0.435	0.00***
Leg agility	0-4	1.862±0.351	1.379±0.494	0.00***
Arising from chair	0-4	1.138±0.351	0.966±0.499	0.134
Posture	0-4	1.586±0.501	1.483±0.509	0.439
Gait	0-4	1.690±0.471	1.552±0.506	0.287
Postural stability	0-4	1.172±0.658	1.138±0.639	0.840
Body Bradykinesia	0-4	1.690±0.471	1.552±0.506	0.287

Values are mean + S.D (n=29).Significant difference by Newman-Keuls test. *p<0.05,p<0.01,***p<0.001 compared to baseline, following Student's t-test.**

All subjects gave written consent before induction in this study. All subjects were elderly patients above 50 years and conversant in Urdu and willing to be available for participation in this study.

On enrollment each patient received complete physical examination and lab tests were performed.

All registered patients were advised to attend the respective OPDs every week and at the end of 3rd month at a special counter allocated for the purpose of this study.

Evaluation of Subjects: Evaluation of the subjects was done on the basis of

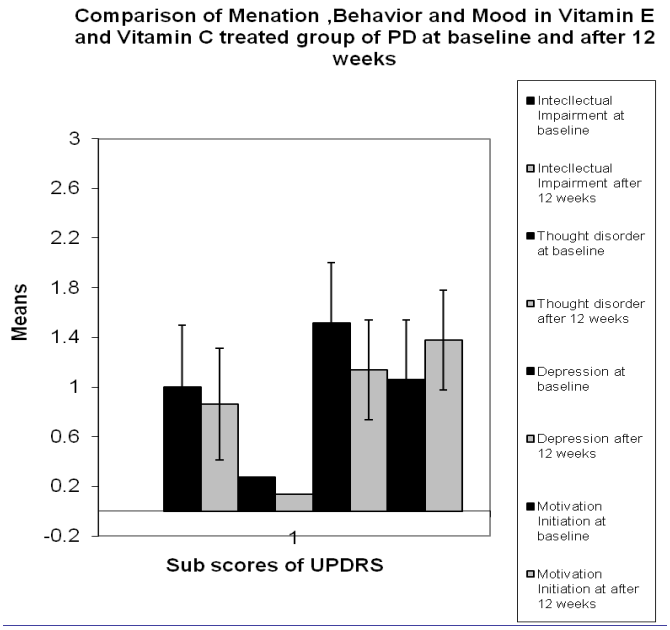
- Patients Health Questionnaire with complete family history and medications.
- Unified Parkinson's disease Rating Scale (UPDRS).

Dietary Assessment: Mini nutritional assessment (MNA) was used to evaluate the risk of malnutrition in the elderly. Evaluation includes questions regarding previous medical illnesses, drug history, musculoskeletal disorders, dementia, and dermatological history, number of family members at home, psychiatric assessment and anthropometric measurement. None of the patient was found to be malnutrioned or had any signs of vitamin C and vitamin E deficiency.

Statistical Analysis: We examined the patient before and after giving antioxidants on UPDRS. Sample t test was applied and charts were drawn using MINITAB software. Each Subject was compared with his own baseline value and *p-value* was calculated statistically.

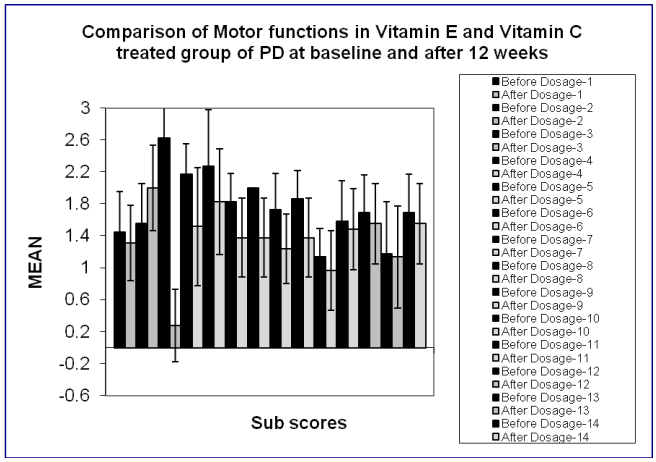
RESULT

Effects of Vitamin E& Vitamin C after 2 Months on UPDRS Sub scores



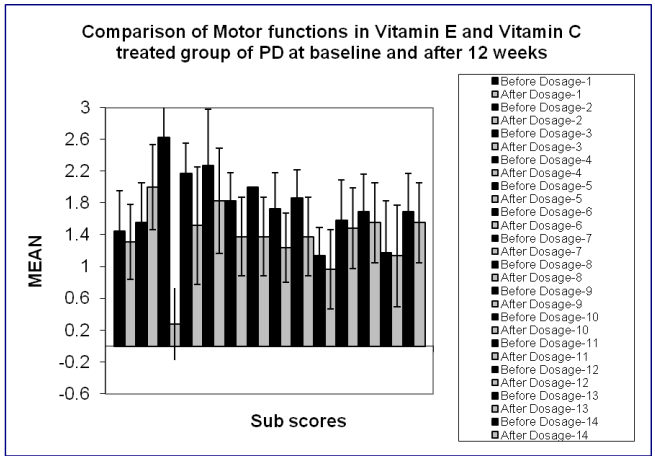
Values are mean + S.D (n=29).Significant difference by Newman-Keuls test.*p<0.05,**p<0.01,***p<0.001 compared to baseline ,following Student's t-test.

Graph 1: Effects of Vitamin E and Vitamin C on UPDRS Sub scale 1 in PD patients at baseline and after 12 weeks



Values are mean + S.D (n=29).Significant difference by Newman-Keuls test *p<0.05,**p<0.01,***p<0.001 compared to baseline, following Student's t-test.

Graph 2: Effects of Vitamin E and Vitamin C on UPDRS Sub scale 3 in PD patients at baseline and after 12 weeks.



Values are mean + S.D (n=29).Significant difference by Newman-Keuls test.
p<0.05,p<0.01,***p<0.001* compared to baseline ,following Student's t-test.

Graph 3: Effects of Vitamin E and Vitamin C on UPDRS Sub scale 3 in PD patients at baseline and after 12 weeks

Table 3: Effects of Vitamin E and Vitamin C on UPDRS Sub scale 3

Sub scores	Possible Range of Scores	Baseline N=11	Three Months after dosage N=11	*P Value* Three Months after dosage Vs. Baseline
Motor Examination**:** 0-56				
Speech	0-4	1.448±0.506	1.310±0.471	0.287
Facial Expression	0-4	1.552±0.506	2.00±0.535	0.00***
Tremors at Rest	0-4	2.621±0.494	0.276±0.455	0.00***
Action or postural Tremors	0-4	2.172±0.384	1.517±0.738	0.00***
Rigidity	0-4	2.276±0.702	1.828±0.658	0.015*
Finger Taps	0-4	1.832±0.351	1.379±0.494	0.00***
Hand movements	0-4	2.0±0.0	1.379±0.493	0.00***
Rapid Alternative Movement	0-4	1.724±0.455	1.241±0.435	0.00***
Leg agility	0-4	1.862±0.351	1.379±0.494	0.00***
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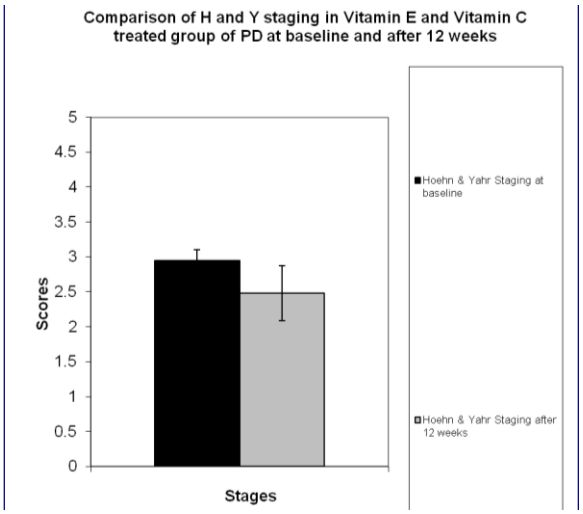
Gait	0-4	1.690±0.471	1.552±0.506	0.287
Postural stability	0-4	1.172±0.658	1.138±0.639	0.840
Body Bradykinesia	0-4	1.690±0.471	1.552±0.506	0.287

Values are mean + S.D (n=29).Significant difference by Newman-Keuls test *p<0.05,p<0.01,***p<0.001 compared to baseline ,following Student's t-test.**

Table 4: Effects of Vitamin E and Vitamin C on UPDRS Sub scale 4 (Hoehn and Yahr staging and Sub scale 5 (Schwab and England Activities of daily living ADL)

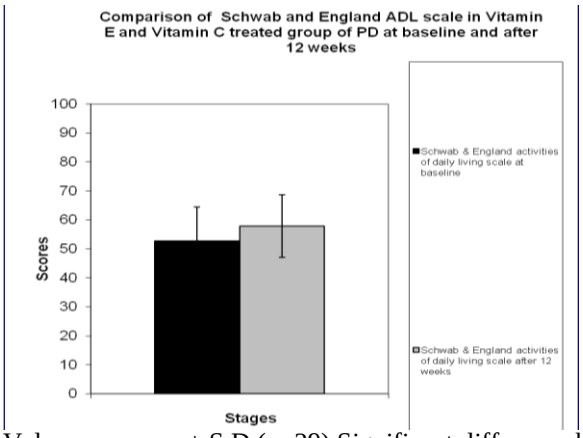
Scale	Possible Range	Baseline N=29	Three Months after dosage (N=29)	P Value Three Months after dosage Vs. Baseline
Hoehn&Yahr Staging	0-5	2.948±0.155	2.483±0.389	0.00***
Schwab & England activities of daily Living scale	0%-100 %	52.8±11.6	57.9±10.8	0.085

Values are mean + S.D (n=29).Significant difference by Newman-Keuls test.
p<0.05,**p<0.01,p<0.001 compared to baseline ,following Student's t-test**



Values are mean + S.D (n=29).Significant difference by Newman-Keuls test.*$p<0.05$,**$p<0.01$,***$p<0.001$ compared to baseline ,following Student's t-test

Graph 4.1: Effects of Vitamin E and Vitamin C on UPDRS Sub scale 4 (Hoehn and Yahr staging) in PD patients at baseline and after 12 weeks



Values are mean + S.D (n=29).Significant difference by Newman-Keuls test *p<0.05,**p<0.01,***p<0.001 compared to baseline ,following Student's t-test

Graph 4.2: Effects of Vitamin E and Vitamin C on UPDRS Sub scale 5 (Schwab and England Activities of daily living) in PD patients at baseline and after 12 weeks.

DISCUSSION

It has been proved that an oxidative stress brings apoptosis in almost all cells of the body[25] due to high levels of free radicals which causes damage to lipid membrane especially long chain fatty acids.[26] We have used two different vitamins yet most potent antioxidants having synergistic effects on each other.[27] Both antioxidants have been used in combination in patients suffering from Parkinson's disease. Up till now no study has ever been conducted in urban areas of Karachi which has used this combination in patients suffering from Parkinson's disease in their different stages.

It was found that patients responded to this combination in a very energizing way making them more active, less depressed and motivated. In some patients who were younger i.e. around age of 43 years as compared to others who were around 65years, their diseases free period duration increased by two folds. Some male patients found this combination very aphrodisiac thus resulting in increased libido.

In a study by Etminan et al, it was observed that there was a decrease in the level of vitamin E in PD patients as compared to control individuals which is compatible with the results of a meta-analysis study, suggesting a neuroprotective effect of dietary vitamin E in attenuating the risk of PD[28] and same can be applied to other antioxidant vitamins.

As all of the patients were living in urban areas of Karachi, thus inhaling polluted environment on regular basis which can result in increased oxidative stress[29-30] as pollution is a powerful source of oxidants and causes aging or death of brain cells even in normal healthy individuals. If the patients have PD and they are living in such conditions where there is high exposure to oxidants from air then one can imagine the degree of worsening of symptoms by two folds and above all worsening of symptoms in patients with neurodegenerative diseases. The statistical analysis confirms the promising future of antioxidants in patients with PD.

CONCLUSION

Antioxidants must be given in combination to Parkinson's patients especially in the early stages of their disease in order to improve their quality of life and to prevent worsening of their disease.

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Original Article

Intramedullary Nailing for Open Fractures of the Tibial Shaft

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ABSTRACT

Background: Interlocking intramedullary nailing has become a popular method of fixation for closed tibial fractures, and a series of reports has confirmed excellent results with this technique. However, the use of intramedullary nails for open tibial fractures is controversial. The standard treatment for these injuries has been external fixation, particularly for fractures associated with more severe soft-tissue injuries.

Objective: The purpose of the present study was to compare the clinical and radiographic results of intramedullary nailing of open fractures of the tibial shaft after reaming with those of nailing without reaming.

Study Design: This was follow-up comparative study.

Place and Duration of Study: This study was conducted at the Department of Orthopaedic, Shaikh Zayed Hospital, Lahore from Jan. 2009 to Dec. 2011.

Materials and Methods: Thirty patients who had thirty-four open fractures of the tibial shaft were randomized into two treatment groups. Sixteen fractures (nine type-I, three type-II, two type-IIIA, and two type-IIIB fractures, according to the classification of Gustilo et al.) were treated with nailing after reaming, and eighteen fractures (ten type-I, four type-II, two type-IIIA, and two type-IIIB fractures) were treated with nailing without reaming.

Result: The average diameter of the nail was 10 millimeters (range, nine to eleven millimeters) in the group treated with reaming and 9 millimeters (range, eight to ten millimeters) in the group treated without reaming. No clinically important differences were found between the two groups with regard to the technical aspects of the procedure or the rate of early postoperative complications. The average time to union was 30 weeks (range, thirteen to seventy-two weeks) in the group treated with reaming and 29 weeks (range, thirteen to fifty weeks) in the group treated without reaming. Two of the fractures treated with reaming and three of the fractures treated without reaming did not unite. There were two infections in the group treated with reaming and one in the group treated without reaming. More screws broke in the group treated without reaming four, per cent) than in the group treated with reaming (Three; 9 per cent). The functional outcome, in terms of pain in the knee, range of motion, return to work, and recreational activity, did not differ significantly between the groups.

Conclusion: We concluded that the clinical and radiographic results of nailing after reaming are similar to those of nailing without reaming for fixation of open fractures of the tibial shaft, although more screws broke when reaming had not been done.

Key Words: Intramedully Nailing, Open Fractures, Tibial Shaft.

INTRODUCTION

Interlocking intramedullary nailing has become a popular method of fixation for closed tibial fractures, and a series of reports has confirmed excellent results with this technique[1,2,3,4]. However, the use of intramedullary nails for open tibial fractures is controversial. The standard treatment for these injuries has been external fixation, particularly for fractures associated with more severe soft-tissue injuries5,6,7.

Intramedullary nailing with reaming of the medullary canal is generally considered to be contraindicated for open fractures of the tibia[8,9,10], as the damage to the endosteal blood supply caused by reaming[11] may theoretically increase the risks of non-union and deep infection. It has, therefore, been suggested that insertion of nails without reaming is safer. Recent studies have indicated, however, that nailing either with or without reaming can be used for open tibial fractures with acceptable results[12,13,14]. The purpose of the present study was to compare the clinical and radiographic results of intramedullary nailing of open fractures of the tibial shaft after reaming with those of nailing without reaming.

MATERIALS AND METHODS

All grades of open injury were considered suitable for the study. The patients were randomized either nailing with reaming or nailing without reaming. Patients were excluded if they had a fracture in the proximal fourth of the tibia or a fracture within four centimeters of the ankle, neither of which was judged to be amenable to intramedullary nailing; if they had initially been managed with external fixation at another institution; or if they had open growth plates. There were no other exclusion criteria.

Thirty patients 34 with open fractures of the tibial shaft were entered into the study. Fifteen patients (16 fractures) were randomized to have a nail inserted after reaming, and 15 patients (18 fractures) were

randomized to have a nail inserted without reaming.

The degree of comminution was graded with use of the classification of Winquist and Hansen15. Two uncomminuted, twelve grade-I, ten grade-II, six grade-III, and four grade-IV fractures were treated. Two fractures involved the proximal third of the tibia; two, the proximal and middle thirds; eighteen, the middle third; ten, the middle and distal thirds; two, the distal third. The levels of the fractures, the degrees of comminution, and the patterns of the fractures were evenly distributed between the two groups. The severity of the open injury was determined with use of the classification of Gustilo et al[16,17], on the basis of the initial appearance of the wound and the findings during débridement. No type-IIIC open fractures of the tibial shaft were treated.

After the initial clinical assessment, all patients began receiving one gram of cefazolin intravenously every eight hours and were given prophylaxis against tetanus, if necessary. Patients who had a grade-III fracture15 were also given gentamicin intravenously (three to five milligrams per kilogram of body weight every twenty-four hours in three divided doses). Antibiotic therapy was maintained postoperatively for seventy-two hours. The same antibiotic regimen was used at each subsequent operative intervention. A standard operative protocol was followed. Wound débridement and nailing were performed as soon as possible after admission to the hospital. As part of the débridement protocol, a minimum of ten liters of saline solution was used for irrigation.

After débridement, nailing was performed with the patient on a fracture table using standard technique. Three nails were dynamized, one without reaming group and two with reaming group.

The average diameter of the nail was 10 millimeters in the group treated with reaming and 9 millimeters in the group treated without reaming.

No wound was closed primarily. The median time to coverage of the wound was five days for both groups. Split-thickness skin-grafting was performed for nine fractures. Ten wounds were treated with delayed primary closure. One fasciocutaneous flap, two gastrocnemius or soleus flaps were used for the type-IIIB injuries.

Early perioperative complications, including compartment syndrome, fat embolism, and pulmonary embolism, were recorded. Patients who had an isolated tibial fracture were discharged from the hospital when they had evidence of satisfactory wound-healing and were able to walk with crutches. Patients in both groups were advised to remain non-weight-bearing for the first six weeks after the injury, irrespective of the fracture configuration. Patients who had multiple injuries were mobilized and discharged as soon as the other injuries allowed it.

After discharge, we attempted to examine the patients clinically and radiographically on a monthly basis until union. Clinical union was defined as the ability to bear full weight with no pain at the site of the fracture, and radiographic union was defined as evidence of bridging of three of the four cortices on standard anteroposterior and lateral radiographs. Fractures that needed revision intramedullary nailing or bone-grafting in order to heal were designated as non-unions. Fractures for which elective bone-grafting was used to bridge segmental defects after wound-healing were not considered non-unions unless subsequent operative intervention was necessary to achieve union. The fracture was converted to a dynamic status with removal of the proximal or distal locking screws at the discretion of the treating surgeon, and this was not taken to be an indication of non-union unless the fracture subsequently failed to heal. Six fractures that had been treated with reaming and four fractures that had been treated without it were converted to a dynamic status.

Malunion was defined as any angulation of more than 5 degrees in any direction as seen on the radiographs or shortening of more than one centimeter or rotation deformity of more than 15 degrees on clinical measurement. Failure of the implant and any action necessary as a result were recorded. A soft-tissue infection was defined as the presence of purulent discharge from the wound with positive bacteriological findings. Deep infection was diagnosed if operative exploration with osseous débridement was needed to eradicate the infection.

The ranges of motion of the knee and ankle were recorded for each patient. Motion of the subtalar joint was compared with that on the contralateral, normal side and was designated as normal or reduced at the time of the most recent follow-up examination.

The average duration of follow-up was 25 months (range, fourteen to fifty-four months). Ten patients (eleven fractures) who had had reaming and eleven patients (twelve fractures) who had not were followed by telephone and by contact with the local orthopaedic surgeon who was supervising the follow-up care. The prevalence of non-union, malunion, deep infection, and compartment syndrome were compared between the groups.

Statistical analysis: The data were analyzed using SPSS; descriptive analysis was done for both continuous and categorical variable.

RESULTS

The average age of the 20 male and 10 female patients was 27 years (range, sixteen to sixty years) (Fig. 1). Ten patients had been struck by a motor vehicle as a pedestrian, 5 were involved in a motor-vehicle accident as either the driver or a passenger, 11 were in a motorcycle accident, 2 were in a bicycle accident, and 2 had sustained the fracture as the result of a fall. These

patients stayed in the hospital for a median of seven days (range, four to thirty-eight days) when the nailing had been done after reaming and a median of eight days (range, four to twenty-nine days) when it had been done without reaming.

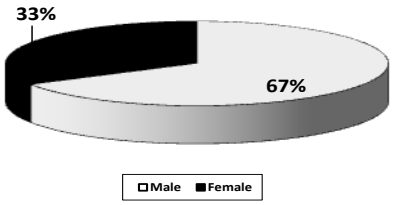
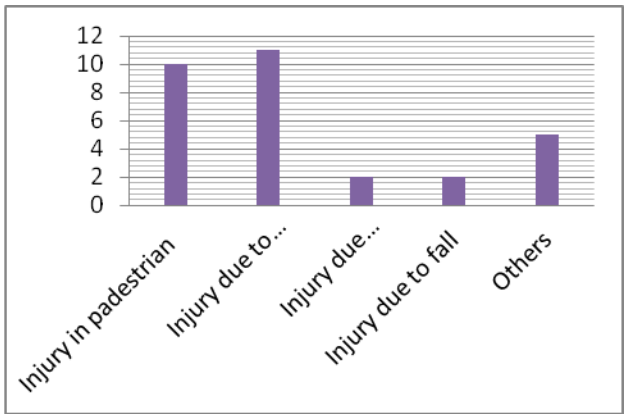


Figure No. 1: Gender distribution.



Fiqure No.2: Graph showing causes of injuries

Technical details: Few differences were noted between the two methods of nailing with regard to the technical details. With the numbers available, there were no significant differences between the two groups with regard to the average estimated blood loss or the average times needed for insertion of the nail, distal locking, and fluoroscopy. The average time needed for proximal locking was 10 minutes with or without reaming.

Early postoperative complications: A compartment syndrome developed in the injured limb of one patient who had had reaming. One patient who had not reaming had pulmonary emboli. Similarly, one patient who had had reaming had fat-embolism syndrome.

Union of the fracture: The average time to union was twenty-eight and twenty-one weeks for the type-I fractures in the group treated with reaming and the group treated without reaming, respectively; twenty-eight and twenty-seven weeks for the type-II fractures; thirty-four and thirty-one weeks for the type-IIIA fractures; and thirty and thirty-five weeks for the type-IIIB fractures. With the numbers available for study, the observed differences were not significant.
Total were five cases, two fractures with reaming, three fractures without reaming.

Infection: There were two infections: one in the group that was treated with reaming and one, in the group that was treated without reaming. The patient in the group treated without reaming, who had a type-II open fracture, was seen six weeks after the injury at another hospital because of cellulitis around the fracture wound and a purulent discharge, which was determined to contain Staphylococcus aureus on culture. The patient was managed with intravenous administration of cloxacillin and the application of dressings. The infection resolved, and the patient was subsequently discharged. One deep infection in the group treated with reaming developed in a type-IIIB open fracture had been fixed with the use of a ten-millimeter-diameter nail. Four weeks later, the patient was seen with an abscess under the flap that communicated with the site of the fracture. Radiographs revealed that the nail had broken at the site of the fracture. The abscess was drained, the site of the fracture and the soft tissues were debrided of infected material. An antibiotic-bead werea implanted, and the wound was closed at five days. Bacteriological cultures were positive for Staphylococcus aureus, and the patient was managed with cloxacillin administered intravenously for fourteen days and then orally for an additional three months, by which time the fracture had healed with no sign of infection. One year after presentation of the infection, there had been no recurrence.

Failure of the implant: Breakage of a screw was associated with two nails that had been inserted after reaming and five nails that had been inserted without reaming. Two of these breakages were associated with a non-union, and none resulted in the development of a malunion. No specific action was taken, and the breakages did not compromise the outcome. Two of the nails that had been inserted after reaming broke: one breakage was associated with a deep infection, as already described, and one was associated with an aseptic non-union. One of the nails that had been inserted without reaming broke; this breakage was associated with a non-union. With the numbers available, the rates of broken nails were not significantly different between the two groups.

Malunion: There was a malunion of one of the fractures treated with reaming and one of the fractures treated without it, but the malunions were not related to failure of the implant.

Functional outcome: Three patients who had had reaming had a reduced range of motion of the knee. Two of these patients had had a severe injury of the ipsilateral femur (a comminuted grade-IIIA open fracture of the femoral shaft in one and a grade-IIIA

open supracondylar fracture in the other). One patient from the group treated without reaming, who had had a grade-IIIB tibial fracture with a ligamentous injury of the ipsilateral knee, also had a reduced range of motion of the knee.

Seven patients in the reamed group and six in the undreamed group had pain in the knee.

DISCUSSION

Intramedullary nailing after reaming is now accepted as the method of choice to treat open femoral fractures[18,19,20], but its use remains controversial with regard to open tibial fractures. The vascular damage inflicted by reaming in association with the soft-tissue injury has been thought to increase the risk of infection and delayed union to an unacceptable level[21]. Early reports of the use of unlocked nails with reaming for open tibial fractures seemed to confirm this view. Hamza et al[22] reported three infections after the treatment of twenty-two open fractures, and Smith[28] subsequently reported six infections in eighteen patients. Recent authors have also been circumspect in their enthusiasm for the technique. Klemm and Börner reported six infections after treatment of ninety-three grade-I open fractures with insertion of a locking nail after reaming[23]. Bone and Johnson reported two infections after treatment of eight grade-II and III fractures with nailing after reaming[24]. On the basis of these studies, the current opinion is that insertion of a nail after reaming is contraindicated for the treatment of open tibial fractures[8,9,10].

The criticism that nailing after reaming is associated with high rates of infection and non-union is theoretical and is based on limited reports with small numbers of patients managed mostly with unlocked nails[24,22]. Kaltenecker et al. reported no infections after treatment of sixty-six type-I and II open tibial fractures with nailing after reaming[25]. Court-Brown et al. recently reported a rate of infection of 6 per cent (one of eighteen) for type-IIIA fractures and 13 per cent (three of twenty-four) for type-IIIB fractures treated with insertion of a Grosse-Kempf nail after reaming[12,13]. Rates of union and malunion compared very favorably with those reported with current designs of external fixation[5,6].

Locking nailing without reaming causes less damage to the intramedullary blood supply and is considered by some to be a safer method of treatment for open tibial fractures[26,27,28].

We attempted to determine if the process of reaming was related to the rate of clinical complications. We did not find clear differences between our two groups. We did not demonstrate any clinically important differences with regard to the technical aspects of the operative procedure, and the rates of early complications were similar in the two groups. The over-all time to union and the rate of non-union were remarkably similar between the two groups, with no evidence that the reaming process delayed union. The need for bone-grafting was also rare; non-unions were treated successfully with revision of the nail.

We were unable to show that the reaming process is associated with an increased risk of either deep infection or non-union. A recent experimental study revealed no difference in the mechanical strength of callus at three months when nailing after reaming was compared with nailing without reaming in a sheep model[28]. Schemitsch et al. also showed a rapid recovery of blood flow to the site of the fracture despite reaming[28]. The more important factor in fracture-healing and in the body's ability to resist infection is the viability of the surrounding soft tissue. Operative care of the soft-tissue wound is critical in the treatment of open fractures. The pluripotential mesenchymal cells that form fibrous tissue and eventually bone are thought to originate predominantly from surrounding tissue and the cambial layer of the periosteum. The reaming process is likely to have little detrimental effect on this aspect of fracture-healing. The role of the endosteal circulation in fracture-healing may therefore be less critical than has been supposed.

We believe that adequate débridement of the soft tissue and bone followed by sound soft-tissue coverage is the key to minimizing deep infection after these injuries, irrespective of whether the bone is reamed or not. The rate of infection in this series is lower than has been reported by others[12,13]. This may be explained in part by our use of an antibiotic-bead pouch in the open wound. There is a gradually accumulating body of clinical evidence to suggest that this technique can help to decrease the prevalence of wound infection after open fractures[29].

The increased prevalence of failure of the locking screws in association with nails inserted without reaming has been noted by other authors[14] but was not associated with an increased risk of non-union or malunion. As might be anticipated, the functional outcomes in the two groups were broadly similar in the present study.

Although this is the largest prospective trial of which we are aware, the number of patients in each group may not be large enough to demonstrate differences of small magnitude. On the basis of the results in this study, it seems likely that any relative advantage associated with either nailing after reaming or nailing without reaming is small and may only emerge in a study of much larger numbers of patients.

CONCLUSION

No comparable difference in outcome for open fractures tibial shaft treated with Intramedullary Locking. Nail with or without reaming noted.

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Original Article

Firearm Injuries Pattern in Cases Autopsied at District Head Quarter Hospital Kasur

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ABSTRACT

Background: In the recent years the fire arm possession and its use in violence has superseded many times the conventional means used even in rural setup. This study was conducted to know the pattern of injuries in fire arm related deaths, the prevalence of firearm weapons used in violence and the time interval the victim survived after sustaining injures in such incidences.

Study Design: Observational Study.

Place and Duration of Study: This study was conducted at DHQ, Hospital kasur during the period from 1st January 2008 to 31st December 2010.

Materials and Methods: This study includes 199 cases where death was due to some fire arm weapon out of total 451 cases autopsied at District Head Quarters Hospital kasur.

Results: The rate of fire arm related deaths during this period was 44.12%. Males accounted for 80.90% and females were 19.10%. In 60.30% cases death took place immediately after sustaining injuries, in 26.63% it was within minutes and in3.51% the victim survived for hours after being injured. In9.51% cases the victim remained admitted in hospital and died there due to some injury related complications.

Conclusion: An interdisciplinary approach is required to control fire arm weapons possession, to educate the masses especially youngsters about sanctity of human life and how to control the nerves during periods of mental irritability and instability.

Key Words: Fire arm, fire arm related injuries, autopsy.

INTRODUCTION

Violent injuries are the 8th leading cause of death worldwide.[1]The incidence of firearm related deaths has increased tremendously from only 9% of total cases autopsied at King Edward Medical College in 1984 to 50% of the total cases in 1995.[2]This is similar to the figures given by the Punjab police department in its report for the year 1984 to 1995 where the firearm fatalities show four times rise from 1984 to 1995[3]. Firearm injury in U.S. has averaged 32538 deaths annually between 1970 and 2002[4]. It is the second leading cause of death from injury after motor vehicle crashes and in several states is the leading cause of injury and death[5]. An estimated two nonfatal injuries occur for every firearm death[6,7]. Firearms are involved in approximately 65% of homicides, 55% suicides, 40% robberies and 20% of aggravated assaults[5]. There are several facts which compel for the development of interventions to reduce the firearm impact; firearm injury and its subsequent repercussions are preventable; fire arm injury disproportionately affects young people resulting in lives cut short. A number of studies have found that head and neck which makes 6.5%of body surface area accounts for 37.2% of fatal gun shot wounds .On the other hand the thorax which constitutes 13.7% of total body surface has 36.4%gunshot wounds while abdomen being 10.6%of body surface area bears only 9.2% fatal gun shot injuries[5]. Compared to other weapons commonly used in interpersonal violence, firearms have the highest lethality. The likelihood and severity of injury depends on the type of weapon used and the intent of the person using the weapon. It is estimated that nearly one third of all gunshot injuries are fatal. It has been reported that 76.6 % of self inflicted gunshot wounds, 21.6% of intentional interpersonal firearm injuries and 7.3%of unintentional wounds by a firearm weapon result in death[8].The ratio of fatal fire arm related injuries to non fatal injuries during 1992 -93 were approximately 1:2.6[6].A 2002 study shows that majority of homicide victims (78%) were younger than 40 years old; 54% of victims were between 15 and 29 years[9].

Firearms are of two major types being long guns, i.e., rifles and shotguns and handguns(revolvers and pistols).In U.S. in 2003 firearms were used in66.9%of all homicides. Hand guns accounted for 51.1% of the total homicides and approximately 76.6% of all firearm homicides. By comparison shotguns were used in 5.1% of firearm homicides and rifles were also used in 5.1% of firearm homicides [10,11,12]. There are certain factors which require the interdisciplinary study of firearm injuries and development of interventions to reduce its impact on the society and its subsequent repercussions in terms of social, economic and psychological burdens. Research on firearm injury provides evidence that specific changes can be made that will reduce the deaths, disability and cost to society. The present study is an attempt to know the extent of injuries, areas of the

body involved and the period elapsed between death and post mortem examination.

MATERIALS AND METHODS

The data for the present study was taken from District Head Quarters Hospital Kasur. It comprised 451 cases brought to this hospital for autopsy purpose for the period of three years from 1st January 2008 to 31st 2010. Out of these cases 199 were selected where the cause of death was injury due to firearm weapon. The information obtained from autopsy reports and police papers was evaluated regarding the sex and age of victim ,number of firearm injuries, area of body involved , the type of weapon used and the time interval between death and postmortem examination.

RESULTS

A total of 451 autopsies were conducted during the period from 1st Jan 2008 t0 31st December 2010 at District Head Quarters Hospital Kasur. Out of which 199 (44.22%) were due to firearm weapons. The frequency of the firearm death showed an upward swing during these three years.

Table No1: Year Wise Distribution of Cases (n=199)

Year	Total Autopsies	Fire arm deaths	%age
2008	156	60	38.46
2009	152	72	47.37
2010	143	67	46.85
Total	451	199	

Table No.2: Sex Distribution (n=199)

Sex	Number of cases	%age
Male	161	80.90
Female	38	19.10
Total	199	100

Out of 199 deaths resulting from fire arm injuries, males (80.90%) were four folds more than females (19.10%)

Table No. 3: Age Distribution (n=199)

Age Group (Age in years)	No. Of cases	%age
<15	5	2.5
16-30	104	52.26
30-45	66	33.16
45-60	20	10
>60	4	2
TOTAL	199	100.00

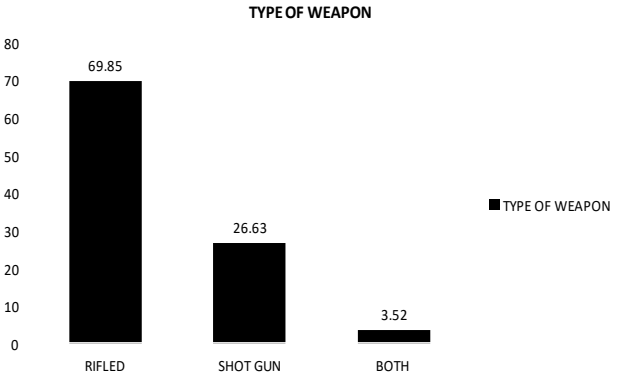
The age trend as visible from this table is that 85.42% deaths are taking place during the age groups from 15 years to 45 years.

Most of deaths due to firearm injuries were caused by multiple gunshot injuries. In 48.24% cases a single injury caused the death whereas in 55.27% cases it was due to multiple shots involving more than one body parts

Table No. 4: Number of Injuries (n=199)

No. of injuries	No. of cases	%age
Single	96	42.24
Multiple	103	51.76
Total	199	100.00

Type of Firearm Weapon: The weapon was assessed on the basis of telltale pictures of wounds. In 139 cases (69.85) rifled weapon, in 53 cases (26.63) shot gun and



in 7 cases (3.52) both were used.

Table No.5: Distribution of Fire Arm Injuries by Body Region (n=199)

Body area	No. of cases	%age
Head Including face and neck	46	23.12
Chest	37	18.59
Abdomen	28	14.70
Limbs	11	5.53
Head and others except chest	12	6.03
Chest and others except head	33	16.58
Both head and chest with other parts	32	16.08

Overall head was involved in 90 cases (45.22%) and chest in 102 (51.25%) cases.

Table No.6: Time between Injury and Death (n=199)

Time interval	No. of cases	%age
Immediate after injury	120	60.30
Within minutes after injury	53	26.63
Within hours after injury	7	3.51
Hospital death	19	9.54

The time between injury and death was evaluated on the basis of location and extent of injuries. It was immediate in 120 cases (60.30%), within minutes in 53 cases (26.63%), within hours in 7 cases (3.51%) and 19 (9.54%) died in hospital.

The time interval within hours includes cases where the victim had injury to smaller blood vessel but he was not shifted to the trauma centre and hence died due to continuous hemorrhage. In the category "Hospital death" is cases where the victim was taken to some hospital and despite medical intervention the death occurred.

DISCUSSION

In the developed world as well in the urban areas of Pakistan where studies have been carried in the past the incidence of firearm related deaths is up to 50%. And the same also holds true in the semi urban and rural settings of the country, as is evident from the number of deaths relating to firearm injuries in this study. This is due to easy availability and accessibility to the firearm weapons in the country. In survey conducted by GunPolicy.com, the estimated number of guns held by civilians in Pakistan is 18,000,000. Of this only 7,000,000 are licensed firearm owners[13]. Therefore there exists dire need for strict implementation of firearm control laws. In Australia, Canada and other countries the firearm fatalities decreased dramatically once strict laws and rules were implemented[14-16]. In Washington D.C. firearm homicidal deaths decreased dramatically in 1976 by just passing the regulatory firearm law and before even recovering a single gun[17].

During the period under study the majority of victims were males and the male to female ratio was 4.2:1. This is in accordance with previous studies but as compared to the study carried out in Sindh in 2002 and North Carolina conducted in 1970-71 the male to female ratio stood at 4.8:1.The possible reason of this increased number was more independence to womenfolk leading to more involvement in social, economic and cultural activities. That has exposed them to more violence.

Age distribution like previous studies in the country and abroad was the same. Though there were victims among all age groups but the maximum number of victims belonged young adolescent and adults ,i.e16-30 and 30 to 45 years. This is due to more vigor in these age groups which can lead to easily volatile and flamboyant behavior. But the thing to worry is that in any country these are people who are actively involved in economic activities and hence responsible for financial support for their families and indirectly their country. So there is much more need to provide counseling to the youth to practice restrain from violence and channelizing their vigor and energy positively and constructively. It needs to introduce interventions that bar the youth from easy accessibility to firearm weapons. It may be by influencing people awareness about the risks of firearm ownership; educating people about the proper use and storage of firearm: and preventing criminals and youth from purchasing and carrying weapons.

As compared to other weapons used in violence firearms are most lethal. Their morbidity and mortality are highest. And among them rifled ones, i.e., handguns (pistols and revolvers) are maximally used 139/199 (69.85%). Whereas shot guns were found in 26.63%.Still in 7 cases (3.52%) both types of weapons were used.

The impact of firearm injury is quite widespread with repercussions felt throughout the society in terms of health care, economics, psychology and sociology. Therefore interdisciplinary teams are needed to seek explanations for increase in number of firearm weapons and hence firearm related violence. The need for well equipped trauma centre, trained personnel dealing trauma cases and transportation from site of crime cannot be ignored. In most of victims in our study the death occurred immediately or within minutes after injury except in 7 cases (3.51%) where the injured survived for a few hours. In these injury was to some peripheral blood vessels in limbs and continued uncontrolled hemorrhage caused death. These are the cases where rescue service like 1122 can prove to be beneficial by minimizing the pre hospital time and effectively resuscitating the injured person during transporting to the trauma centre. During the period of study such facility was not available in small cities like Kasur but now 1122 has been provided and one can see its ambulances plying on the roads and shifting injured persons to the hospitals. This will definitely improve the situation. There are still 19 cases (9.54%)where the victim did not succumb primarily due to injuries but died in hospital due to complications. This number can also reduced if specifically trauma handling trained staff is deployed in the peripheral centers.

CONCLUSION

The fire arm fatalities outnumber the other causes of death. In order to control this, fire arm possession by the public should be monitored through strict legislation. In addition the emotional instability of public at large may be managed by educating people through media.

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Original Article

Life Quality Assessment of Patients Suffering from Oral Cancer

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ABSTRACT

Objective: This study was aimed to determine the patient's own perception of quality of life (QL); that were under treatment for oral cancers. University of Washington Quality of Life Questionnaire (UW-QOL) [1] was used as a screening tool for this purpose.

Study Design: Questionnaire based Cross Sectional Study.

Place and Duration of Study: This study was conducted at Kiran hospital Karachi, (Karachi Institute of Radiotherapy and Nuclear Medicine) from March to August 2011.

Materials and Methods: Thirty patients diagnosed with oral cancer that were coming for treatment at the Kiran hospital Karachi, (Karachi Institute of Radiotherapy and Nuclear Medicine) were included in the sample. No limitation of age or cancer stage was specified.

Result: Data analysis with SPSS showed that majority of patient surveyed had pain that was controlled by medications; majority of patient felt significantly disfigured; had limited activities. Although activities were slowed down due to fatigue still patients managed to go out however enjoyable recreation was bounded for patients. Swallowing function showed variation from no change, complete liquid diet, soft diet to choking. However most patients could chew soft foods, majority of patient had difficulty with some words but their speech was understood on phone. Greater parts choose no issue regarding function and pain in shoulders. Almost half the patients had normal consistency of saliva, mood mostly unaffected and majority patient were not anxious about their tumour lesion. General health was better before development of cancer and was good in previous seven days. Over all mental health and spiritual health was outstanding and pain was the most important issue patient complained.

Conclusion: This study emphasizes the importance of measuring quality of life of oral cancer patients. UW-QOL[1] questionnaire was an effective screening tool for evaluating the different domains from each patient at an individual level.

Keywords: Head and neck cancer, quality of life, Health related quality of life**.**

INTRODUCTION

Most cancers worldwide and in Pakistan are diagnosed when already reached advance and incurable stage[1,2]. There is a general need to access the quality of life(QL) in the developing nations and build a structure that exists commonly in the West.[2]QL is further specified as health-related quality of life (HRQOL). [3] Management of cancer has increased effectiveness, when applying patient's HRQOL .[4] The ability to measure the QL has the realistic value of guiding policymakers, health service researchers, epidemiologists, program evaluators, and clinicians engross in the effects of interventions.[5] The measures regarding QL also provide useful information to patients and family members, third-party payers, and employers.[5] Self-oriented evaluation is a practical procedure for assessing the effectiveness of therapies.[6]

It is the most important parameter to consider in diagnosis and post-treatment follow-up Cancer of oral cavity has the highest prevalence in South-east Asia 9.8%.[7] Rating Karachi as the city of highest incidence of oral cancer of the world.[8] GLOBOCAN[7] estimates in the next 20 years an annual increase of new cases to rise up almost 21.4 million while mortality from cancer will be over 13.2 million.[2]

Overall maximum record of survival is 5 years after initial diagnosis of oral cancer and hasn't changed appreciably since 1979-1978 [9] Prognostic factors determine survival of patient.[10] Advanced staged with secondary reoccurring tumours will have less survival rate.[10 11, 12]

This study evaluates the disease free period and the good quality of life (QL) of oral cancer patients who were undertreament. This Performa based study will facilitate to structure a baseline data to improve patient suffering from this fatal disease in our country.

MATERIALS AND METHODS

University of Washington questioner (UW-QOL) [1] was selected for this survey. Duration of study was approximately six months. Patient diagnosed and under treatment of oral tumours and admitted in general or private ward of KIRAN hospital Karachi. Patients of both genders were included.

Performa was provided to each patient. To minimize deviation of interpreting questions, each questionnaire and scoring option was verbally translated by the surveyor or attended to the patients as maximum input

from patient's view of his/her quality of life was to be recorded. . Questionnaire composed of sixteen questions total divided into three domains' physical, social and mental health of patient. Twelve questions affecting physical and social behavior as indicated by patient which are pain, appearance, activity, recreation, swallowing, chewing, speech, shoulder, taste and saliva. Three questions related to social and mental health and one question indicating the most important issue faced by the patient due to this disease. Scoring was done from 0-100, 0 considered the worst possible outcome and 100 considered best possible outcomes. Physical questions were divided into five domain score whereas social function had six domains to score.

Before starting any interview a consent form was provided and only willing patients were included for this study.

The data was entered in the statistical software for windows SPSS.The score were categorized into their particular domains. Descriptive data was obtained based on the range of categories and the most frequently chosen answer for each question along with its percentage.

At the end Spearman correlation was computed between the variables taste, saliva, mood and anxiety and all the sixteen questions of the questionnaire. Cancers other than oral cavity were excluded from the study.

RESULT

A total of 30 patients responded to the questionnaire out of which the result indicated that pain score range was between 1-5, minimum 1 indicating patient has no pain and maximum 5 indicating patient has sever pain which is not controlled by medication. Mode was 3, making it lie in moderate pain range, which requires regular medication to control. This means that most of the patients (38.7%) manifested pain that was controlled by medications.

Appearance ranged between minimum 1 which indicates no change in patient's appearance and maximum 5 showing severe social breakdown due to patient's appearance. The mode 3 means that majority of patient feel (35.5%) significantly disfigured have limited their activities.

Score range of activity was between 1 which is minimum indicating that patient is active as before and 5maximum indicating patient is bed ridden and doesn't leave home. Mode was 3 so statement most chosen (41.9%)was I am often tired and have slowed down my activities although I still get out.

Recreation score range was 1-5 indicating minimum1as patient had no limits to recreation activities at home or outside and maximum 5 suggested that the patient was unable to do anything enjoyable. Mode 5 was computed by 35.5 % of which means most patients did not do anything enjoyable.

Swallowing ranged between minimum1; signifying patient was able to swallow as before and maximum 4 indicating the patient choked while swallowing food. Mode resulted as multiple ranges by a percentile of 29.0 patients.

1-3 was the score range of chewing .1 indicated that patient had no change in chewing function and 3 indicates that patient could not chew even soft food. A percentile 41.9 resulted making the mode resulting in multiple ranges.

Speech maximum range was 4, which denoted speech was unchanged and minimum was 1, which denoted patient's speech was not understood at all. Mode calculated as 2 which means majority patients (38.7%) had difficulty with some word but their speech was understood on phone.

Question regarding shoulder pain ranged between minimum1 indicating patient had no complain about their shoulder while maximum 3 suggested that patient were forced to change their work or hobbies due to weakness in their shoulder. Mode was 1 by 67.7%, which indicated patients of oral neoplasm, had no issues with their shoulders.

Taste was between 1-4. Patient could taste food normally was indicated by minimum range 1 and patients who were unable to taste any food by maximum 4. Mode 1 was chosen by a of percentile 35.5 patient.

Saliva ranged between 1minimum, which indicated normal consistency of saliva and maximum 4 indicated complete absence of saliva and mode was 1 chosen by a of percentile 41.9.

Minimum and maximum range 1-5 was of mood .1 indicated no change in patient mood due to cancer resulting while 4 suggested extreme depression by patient. Mode resulted as 2, which indicated mostly patient's mood, were good unaffected due to cancer and was chosen by 41.9%.

Anxieties ranged between minimum 1implying patients were not anxious with their cancer lesion and maximum 4 indicated extremely conscious about their cancer, Figure 1. A percentile 35.5% selected mode 2. Table 1 displays result of mode and range of all the variables.

Three questions were related to general health of patients. The first question compared present to the month before development of cancer. The score for this question was ranged between 1-5 with a mode of 1 indicating that most patients (67.7%) believed their life was much better before development of cancer.

The second question rated general health during last 7 days of the patient and most of the patient (25.8%) indicated it to be good.

Last question was overall quality of life during last 7 days regarding patient's mental, physical, spiritual, and overall health options ranged between 1-6. 61.3% suggested it as outstanding.

Table No. 1: Score Range of Activity.

	Mode	St. Deviation	Range	Min	Max
Pain	3	1.00	4	1	5
Appearance	3	1.03	4	1	5
Activity	3	1.05	4	1	5
Recreation	5	1.49	4	1	5
Swallowing	1.00a	1.08	3	1	4
Chewing	2	0.70	2	1	3
Speech	2	0.95	3	1	4
Shoulder	1	0.67	2	1	0
Taste	1.00a	1.33	3	1	4
Saliva	1	0.91	4	1	4
Mood	2	1.19	4	1	5
Anxiety	2	1.07	3	1	4
QL before cancer	1	1.29	4	1	5
HQL last 7 days	2a	1.36	5	1	6
QL last 7 days	1	1.66	5	1	6
Most imp issues last 7 days	1	2.63	11	1	12

N=30

a multiple modes exist. The smallest value is shown

Table No.2: Co-relation performance.

UW-QOL	Taste	Saliva	Mood	Anxiety
Pain	-.006	0.159	-0.011	-0.026
Appearance	0.003	0.011	0.411*	0.180
Activity	0.017	-0.17	*0.536***	0.82
Recreation	0.417*	0.390*	0.438*	0.167
Swallowing	0.427*	0.351	0.335	0.161
Chewing	*0.527***	0.221	0.381*	0.223
Speech	0.455*	0.394*	0.359	0.349
Shoulder	-0.273	-0.092	-0.004	-2.43
Taste	1.00	0.401*	0.368*	0.308
Saliva	0.401*	1.00	0.326	0.235
Mood	0.368*	0.326*	1.00	*0.542***
Anxiety	0.308	0.235	*0.542***	1.00
HRQOL, compared to month before cancer	-.034	-0.231	0.103	0.328
In general, HRQOL during the past 7 days	0.180	0.116	*0.679***	0.345
Overall QL during past 7 days	0.185	-0.060	*0.496***	*0.606***
Emotional Function (EF)	-0.327	*-4.74***	0.051	-0.098

Correlation is significant at the 0.05 level (2-tailed)

*Correlation is significant at the 0.01 level (2-tailed***

*Correlation is significant at the 0.01 level (2-tailed)**

In the end the performa was concluded by asking the patient about the most important issue which each patient countered during the last 7 days the result of each is displayed in chart 1. Spearman correlation performed between the variable taste, saliva, mood and anxiety with all the sixteen Questions is shown in Table 2.

Table 2 indicates that mood was positively correlated with appearance, activity, anxiety, recreation, chewing and general health of patient during and overall health of patient during the last 7 days. Taste was positively related to swallowing, chewing, recreation, saliva, mood and speech function of patient. Consistency of saliva was positively correlated to speech, taste, mood and recreation. Anxiety was positively correlated with mood and HRQOL overall QL during last 7 days.

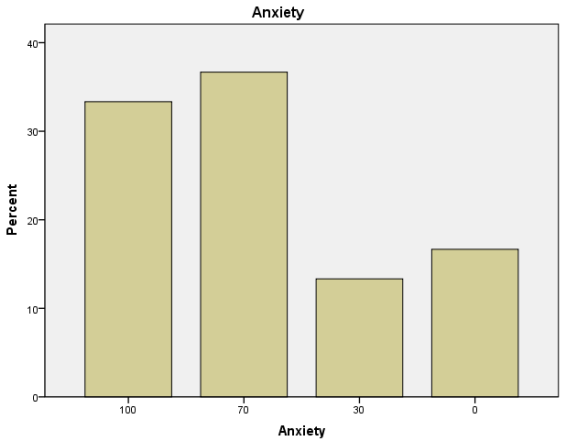

Figure No.1: Percentage and anxiety.

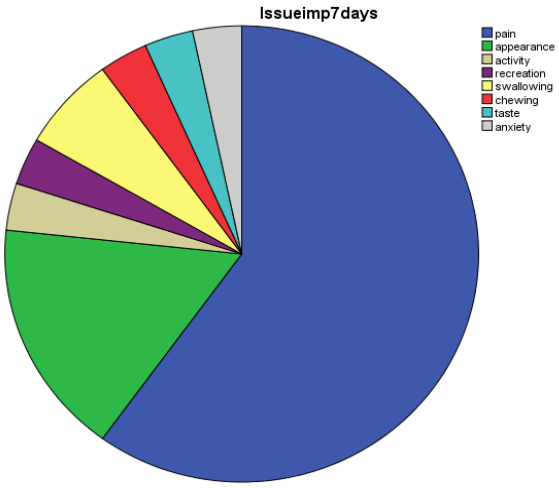

Chart No.1: Co-relation performance between variable text.

DISCUSSION

Quality of life refers to the difference that exists between ones perception of reality and what he expects or wishes out of life.[13] The greater the gap that exists

between this reality and desires, the poorer is ones quality of life. To measure the magnitude of this gap a multidimensional approach is required which would include a thorough analysis of the physical, emotional, social and spiritual well being all of which is well represented in the UW-QOL[1] questionnair hence a study of QL for head and neck cancer patients is of grave importance. [14]

This study represents an effort to highlight the quality of life and general health of oral cancer patients in Karachi undergoing treatment at KIRAN hospital. Capturing patients views through literature review was considered crucial in judging survival of patients which has not improved much over the past 20 years [15].

According to assessment of this survey pain component was most important issue reported and tolerated during treatment phase of oral lesions. However regarding their mood and anxiety variation was minimum when compared to other studies in literature[15] [16] Although patients were in different stages and also had different types of oral neoplasm, their treatments and economic status was varied evidently still it can be strongly suggested that cultural, religious and spiritual values have a great influence on how pain issue is managed.[17,18] Mostly patients had deep faith in their religion, which taught them to be enduring, less complaining and gave them a strong inner will to stay calm and tolerate. Family support, friends and other caregivers are a part of our culture and creed that gives the patient the will to survive. It is concluded in many studies social linked support to patients decreased anxiety and depression levels and could even enhance general health of patients who rated it low.[17,18]. .

In this survey disfigurement of facial appearance was second most dominant complain.

This survey also computes variation in measurement of function of swallowing and chewing.

According to this study saliva consistency was normal, patients could chew soft food and differentiate between tastes while others are have less to complete absence of saliva and complete liquid diet or on feeding tube. This presence of variation was again due to different stage and treatment therapy of patients, which was not recorded. As it is proven that High dose radiation to salivary gland caused xerostomia, hence patients with advanced treatments may exhibit this feature to a greater extent.[19].

Patients rating about their overall general health including mental and spiritual health were regarded as outstanding in this survey. This again would be due to the close knit social set up and high spiritual values in our cultural setting.. Hence the aspect of appearance and activity has a grave impact on the mood of the patient, which would lead to quick recovery and better post treatment prognosis .[20]

CONCLUSION

We conclude that patients of KIRAN hospital had a good quality of life where pain was most common affecting their quality of life and anxiety was the modality least affecting their quality of life. Hence a better focus on the control of patient's pain can lead to an improvement of the overall QL of patients and further increase the chances of good post treatment prognosis and recovery.

The author also suggests that recording of QL should be made an integral part of every cancer assessment record.

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Original Article

B-Lynch Suture for the Management of Postpartum Haemorrhage: An Experience at Peoples Medical College Hospital Nawabshah

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ABSTRACT

Objective: To report our clinical experience of the effectiveness and safety of applying B-lynch suture for the management of primary postpartum haemorrhage.

Study Design: An observational, cross-sectional study.

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynaecology at Peoples Medical College Hospital Nawabshah from 1st January 2009 to 30th June 2010

Materials and Methods: All the patients of primary postpartum haemorrhage in whom compression and conventional ecobolic had failed to achieve uterine contraction and haemostasis were subjected to B-lynch suture.

Results: B-lynch suture technique was applied in 33 patients, in 22 patients after vaginal delivery and in 11 patients at the time of cesarean section. This technique was successful in 31 (93.94 %) patients and failed in only 2 (6.1 %). Patients who were proceeded to hysterectomy, none of the patient had infection.

Conclusion: B-lynch suture compresses and envelopes the uterus and manages massive life threatening postpartum haemorrhage successfully. It is effective, simple and fertility conserving procedure.

Key Words: Postpartum haemorrhage, Uterine atony, B-lynch suture, Hysterectomy.

INTRODUCTION

Postpartum haemorrhage (PPH) is an obstetrical emergency that can follow vaginal or a cesarean delivery. Globally 600,000 maternal deaths occur each year and PPH is responsible for about one quarter of maternal mortality[1]. In developing countries PPH accounts for one third of all maternal deaths.[2]

Major obstetrical haemorrhage is the commonest cause of severe maternal morbidity as well with sequel such as shock, renal failure, acute respiratory distress syndrome, coagulopathy and Sheehan's syndrome.[3] So, severe obstetrical morbidity may be a more sensitive measure of pregnancy outcome than mortality alone.[4]

PPH is commonly due to abnormalities of one or a combination of four basic processes referred to as 4Ts. They include tone (Uterine atony), tissue (Retained products of conception), trauma (To genital tract) and thrombin (Coagulation abnormalities). Uterine atony is the commonest cause of PPH (75 – 90 %).[5]

The traditional management of PPH begins with conservative methods such as bimanual compression of uterus, use of uterotonic drugs, uterine packing and temponade with balloon. These are safe and effective but occasionally prove ineffective. Intervention like uterine, ovarian and internal iliac artery ligation, uterine artery embolization and hysterectomy need surgical skill, assistance and they are time consuming and complicated.

B-lynch compression suture described by Christopher B-lynch in 1997 as alternative to hysterectomy. It is an effective, simple and fertility conserving procedure. It compresses and envelopes the uterus and manage massive life threatening postpartum haemorrhage successfully.[6]

MATERIALS AND METHODS

This observational, cross sectional study was conducted from 1st January 2009 to 30th June 2010 in 33 patients in whom B-lynch suture was applied for the management of Primary Postpartum Haemorrhage (PPH) at Department of Obstetrics & Gynaecology, Peoples Medical College Hospital Nawabshah. The informed consent was obtained from the patients included in this study and the study was approved by ethical committee of hospital.

All the patients of PPH in whom manual compression and conventional ecobolic had failed to achieve uterine contraction and haemostasis are subjected to B-lynch suture.

PPH due to birth canal trauma or with irreversible shock or grand multipara were excluded from study. Patient is catheterized and under anaesthesia (General/Local), placed in Lloy-Devis position for access to vagina for the assessment of control of bleeding.

B-lynch suture technique involves the incision in lower uterine segment after dissecting down the bladder (In case of lower cesarean section, uterine cavity already opened). Uterine cavity is examined and evacuated. Uterus is exteriorized and bimanual compression is first applied to assess the potential chance of success of the procedure. Chromic 2 with 70 mm round bodied needle is used to enter and exit the uterus on the right lateral

border. The stitch is then looped over the fundus of uterus and another stitch is taken across the posterior lower uterine segment at the same level of the anterior stitch. This stitch is looped back over the fundus to lie anteriorly and needle enters and exits the left lower uterine segment to be opposite and parallel to the first bite. The both free ends of the suture are pulled taut and tight down, assisted by manual compression to achieve secure tension and haemostasis. Uterine incision is now closed. For patient with placenta praevia additional figure of eight sutures were placed over the bleeding point before the application of bleeding suture. B-Lynch sutures were applied by consultant or senior registrar on duty. The suture material used was Vicryl 1-0. All patients followed routinely. B-Lynch success was assessed by severity of PPH, number of transfusions, number of patients where B-lynch failed and preceded to hysterectomy and postoperative hospital stay. All the data was collected on preset proforma which also included age, parity and gestational age. The data was analyzed by using SPSS version 10.

RESULTS

The mean age ± SD was 26.87 ±5.57 and range was 18 – 40 years and mean parity ±SD 2.66 ±1.291 and gestational age ranged from 34 – 41 weeks. B-lynch suture technique was applied in 22 patients after vaginal delivery and in 11 patients at the time of cesarean section.

Table No.1: Cross Tabulation B-Lynch Suture Procedure and Blood Loss

	Blood Loss during Procedure			Total
	1000 – 1500 ml	1600 – 2000 ml	> 2000 ml	
Applied Successfully	10 (30.30%)	17 (51.5 %)	04 (12.1%)	31 (93.9%)
Failure	00	01 (3.0%)	01 (3.0%)	02 (6.1%)
Total	10 (30.3%)	18 (54.5%)	05 (15.2%)	33 (100%)

Table No.2: Cross Tabulation B-Lynch Procedure and Causes of PPH

	Blood Loss during Procedure		Total
	Uterine Atony	Placental Causes	
Applied Successfully	25 (75.8 %)	06 (18.2 %)	31 (93.9%)
Failure	02 (6.1 %)	00	02 (6.1%)
Total	27 (81.8 %)	06 (18.2 %)	33 (100%)

The estimated blood loss was 1000 – 1500 ml in 10 (30.3%) patients, 1600 – 2000 ml in 18 (54.5%) patients and > 2000 ml in 5 (15.2%) patients (Table-1).
Twenty seven (81.8 %) patients had uterine atony and 06 (18.2 %) patients had placental causes of PPH (Table-2) and B-lynch was successful in 31 (93.94 %) patients and failed in only 2 (6.1 %) patients and proceeded to hysterectomy.

All the patients discharged within 7 days. None of the patients had infection. All the patients were in satisfactory condition at the time of discharge and no complications develop during three month follow-up.

DISCUSSION

It has been estimated that more than 125,000 women died of postpartum haemorrhage (PPH) each year.[7] It remains one of the top three causes of direct maternal death.[8]
Uterine atony is a most common cause of PPH (75-90%) [5] and death can occur within two hours if not managed immediately.[3] When conservative management of PPH fails to control non traumatic blood loss, operative intervention is required. Before proceeding to last option i.e. hysterectomy, B-lynch compression suture, stepwise uterine devascularization or uterine artery embolization can be considered. The later two options required special surgical training or the possibility of emergency intervention radiology and may thus not be an option in an emergency situation.
The B-lynch surgical technique for the management of massive postpartum haemorrhage has been used successfully since 1989. The technique is particularly useful when preserving the uterus and retaining fertility potential is extremely vital.[9]
Worldwide many cases have been performed successfully.[10, 11, 12] There are very few cases of failure reported. These failures were because of delay in application, poor technique, inappropriate material, placenta percreta and coagulopathy.[13] In Pakistan, few studies of B-lynch suture technique have been reported.[14, 15] According to their results; this technique is very effective for the management of PPH. In our study, out of 33 patients, only 02 (6.06 %) patients ended up in hysterectomy and in 31 (93.94 %) patients, it was very successful.
B-lynch suture may also beneficial in cases of placenta praevia, placenta accrete, increta and percreta.[16, 17] In our study, 6 (18.18 %) patients had PPH of abnormal placentation and managed with this technique effectively along with placement of haemostatic suture where needed. There have been isolated reports of adverse consequences of B-lynch suture application.[18, 19] Majority of studies reported no immediate or long term complications and many patients on long term follow up have demonstrated resumption of periods and successful pregnancies.[12, 20]
In developing countries like Pakistan, this simple, inexpensive and quick procedure is of great value to save the life and fertility of woman. This can be performed by surgeon with average skill with limited resources and it can be considered by prophylactic and therapeutic purposes.

CONCLUSION

B-lynch suture compresses and envelopes the uterus and manages massive life threatening postpartum haemorrhage successfully. It is effective, simple and fertility conserving procedure.

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Original Article

Predictors of Dengue Fever and Dengue Haemorrhagic Fever in Punjab, Pakistan

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ABSTRACT

Objective: This study was conducted to assess the future threat of Dengue Fever and Dengue Haemorrhagic Fever in Punjab, Pakistan

Study Design: Observational and Analytical Study**.**

Place and duration of Study: This study was conducted at Directorate General Health Services Punjab, Lahore and data was collected from 1st Jan 2008 to 31st Dec. 2008.

Materials and Methods: Primary data of laboratory confirmed cases was collected from all levels of health facilities of public and private sector. Disease vectors were collected from Lahore. Data of rainfall and temperature were obtained from website of department of meteorology Pakistan to determine the potential values.

Vector-borne diseases are the serious health problems worldwide, including Pakistan. Coverage of control interventions and physio-environmental factors were also analyzed.

Results: In 2008 there was a largest epidemic of dengue fever in Punjab and 1382 cases were reported in 16 districts out of 36, which increased in number of cases up to 5724 and district up to 34 in 2010. Our results suggest that rainfall and temperature were predictive of the abundance of Ae.aegypti and Ae.albopictus and in time interventions have positive significant impact on disease transmission.

Conclusion: This paper offered useful information that the climatic and physio-environmental factors like built-up, agriculture, water bodies and forest areas have different influence on the dengue fever incidences. This will help in focusing the preventive measures being applied on priority in very high and high-risk zones and save time and money. No special funds were used for this study.

Key words: Ae.aegypti, Ae.albopictus, precipitation, temperature, prediction, physio-environment..

INTRODUCTION

Vector borne diseases are the most common worldwide health hazard. Among these, dengue fever is especially wide spread in tropical and arid zones. It is transmitted to the man by the mosquito of the genus Aedes and exists in two forms: the Dengue Fever (DF) or classic dengue and the Dengue Haemorrhagic Fever (DHF), which may evolve into Dengue Shock Syndrome (DSS) (1). Dengue infection occurs due to the bite of the mosquito Aedes aegypti (Ae.aegypti) or Ae.albopictus that is infected with one of the four dengue virus serotypes (2). The infection, earlier restricted to urban/semi-urban centres, now can be seen in rural areas as well. Land use/land cover types and climate, play significant role in dengue cases as reported by several researchers (3). Recently Geographic Information Systems (GIS) and remotely sensed data are being used to evaluate and model the relationships between climatic and environmental factors with the incidences of viral diseases. Spatial analysis involves the use of Geographic Information Systems (GIS) for health; both spatial and temporal changes in environmental condition may be important determinants of vector-borne disease transmission (4-9). Remote sensing data can be used to provide information on the spatial distribution of the vector-borne diseases and the physical environment (10-12). It is mentioned by a researcher that remote sensing and geodesy have the potential to revolutionize the discipline of epidemiology and its application in human health (13). A temporal analysis of Landsat Thematic Mapper (TM) satellite data was employed to predict and map the location of some of the major diseases affecting human health as well (14). Land use/land cover types are the critical variables in epidemiology and can be characterized by remote sensing (15). 1382 dengue fever cases were reported in 2008 in Punjab, Pakistan (16). In present study predictors like environmental factors and vector density has been evaluated and tried to find out the correlation between vector and environment. The objective of the study was to assess the expected future magnitude of diseases incidence in the light of various factors and availability of disease vector density. Assumption of prediction was made on the basis of same type of conditions in other countries where dengue epidemics occurred that concerned may make necessary arrangements to avert the situation.

MATERIALS AND METHODS

Punjab province consists of 36 Districts, located in the eastern border of Pakistan, was selected as the study area (Figure-1), people are pre-dominantly involved in the agriculture.

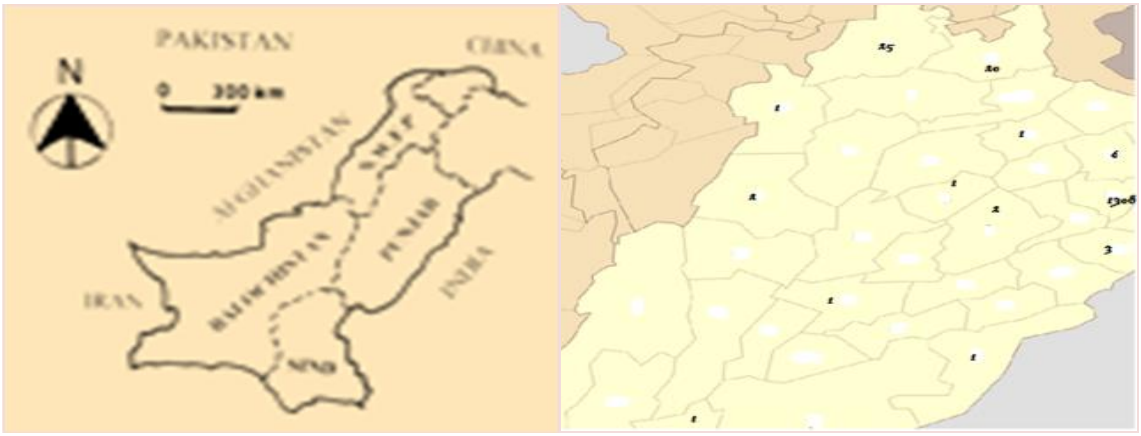

Figure-1: Showing geographical distribution of Dengue Fever cases in different districts of Punjab, Pakistan

Population is about 73,621,000(1998) and area is 205,345 km² with Density people/km² 358.52 (17). Climate of this area is subtropical with extreme high temperatures rising to 46°C in May and dipping low up to 13.2°C in December. In 2008, the average annual temperature of Lahore was 32°C. The weather of Lahore is extreme during the months of May, June and July, when the temperatures soar to 40–48 °C (104–118 °F). The monsoon seasons starts in mid July and continues till mid September, with heavy rainfall throughout the province. The highest temperature was 48.3°C (118.9 °F) recorded in Lahore on May 30, 1944 (18), lowest recorded in was −1.1°C (30.0 °F) on 13 January 1967 (19), the highest rainfall recorded during 24 hours is 221 millimeters (8.7 in) on 13 August 2008 (20), and total 917 millimeters (36.1 in) rain was recorded (21), which influenced dengue transmission in addition to the temperature, and humidity (22). Due to high humidity during rainy season mosquito survival became longer and growth was facilitated (23). Retrospective study was designed and primary medical data from 1st January 2008 to 31st December 2008 was collected from the Provincial Health Directorate Punjab which was collected during epidemics on daily basis.

Regression analysis was used to explore the relationship between the monthly climatic parameters and the number of incidences of DF/DHF in Punjab province. Multiple regression analysis is employed to predict the dengue incidences. The independent variables were used to predict changes in the dependent variable in the rainy and non-rainy seasons. Number of peoples affected by DF/DHF was used as the dependent variable and the rainfall(R), temperature (T) and relative humidity (H) were considered as the independent variables. Multiple regression analysis was carried out for each of the observations of the occurrence of DF/DHF cases and monthly climatic data of 5 years (2006-2010).

RESULTS

In 2008, 1382 DF/DHF cases were reported in Punjab. District wise cases are given in Table 1. Morbidity rate was observed at 1.88 per 100,000 people. The DHF incidences were recorded at the village level by recording complete address. Highest numbers (1308) of dengue incidence were recorded in districts Lahore.

It was found that highest number of cases occurred during November and December (Figure-2). This figure indicated the seasonal dependence of DF/DHF cases, which shows high incidence after rainy season.

The rainfall data of said years were collected from the website of Meteorology Department Government of Pakistan (25) and is given in figure-3 along with number of DF cases. Higher than 20°C is the favorable temperature for Aedes aegypti mosquitoes (2), the average relative humidity observed in 5 years (2006-2010) were 95.6 percent. The 30 years (1961–1990) average monthly rainfall was 24.75 inches in Punjab (24).

The seasons of Punjab are divided in two types in broader context: rainy and non rainy; hence, the effect of these three factors on dengue was analyzed for these two parts of the year. The analysis revealed the land use areas as: agricultural (74.7%), forest (21%), water bodies (0.3%) and Built-up (4.0%) for the year 1998 (24).

Dependence of the climatic variables was evaluated using multiple regression analysis. In addition, as suggested by many researchers, physio-environmental factors also affect the dengue fever incidence, vector density and control activities (Figure-4). Information value approach was utilized to explore which physical and environmental factors are more crucial in dengue incidences and found highly significant (p=0.000) correlation between vector density and diseases but significant (p=0.04) correlation between rain and vector density.

Table No. 1: Monthly distribution of DF/DHF cases in Punjab province in 2008

Sr.#	Districts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1	Attock										12	13		**25**
2	B.Nagar											1		**1**
3	Bahawalpur													
4	Bhakkar										1	1		**2**
5	Chakwal													
6	D.G. Khan													
7	Faisalabad										1	1		**2**
8	Gujranwala										1			**1**
9	Gujrat													
10	Hafizabad										1			**1**
11	Jhang													
12	Jhelum													
13	Kasur											2	1	**3**
14	Khanewal													
15	Khushab													
16	Lahore.	30	43	103	46	28	29	29	29	28	59	312	570	**1308**
17	Layyah													
18	Lodhran													
19	M.B.Din													
20	Mianwali											1		**1**
21	Multan											1		**1**
22	Muzaffargarh													
23	Nankana Sb													
24	Norrowal										2	3	1	**6**
25	Okara													
26	Pakpattan													
27	R.Y.Khan											1		**1**
28	Rajanpur													
29	Rawalpindi			5	3						6	5	1	**20**
30	Sahiwal													
31	Sargodha												1	**1**
32	Sheikhupura										1	2		**3**
33	Sialkot													
34	T.T. Singh													
35	Vehari										2	4		**6**
36	Chaniot													
	Punjab	**32**	**45**	**109**	**49**	**30**	**31**	**31**	**31**	**30**	**62**	**330**	**602**	**1382**

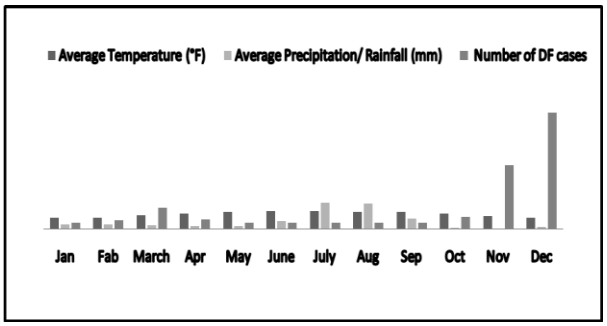

Figure-2: Showing month wise average temperature, rainfall and number of cases in Punjab, Pakistan.

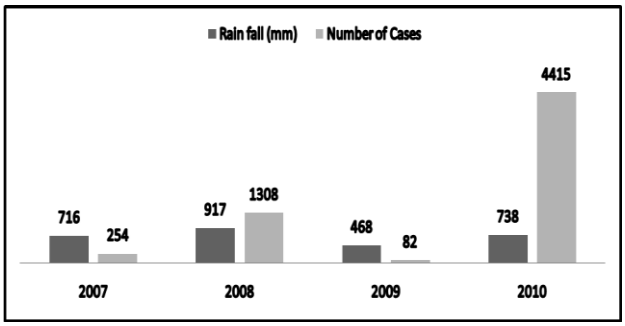

Figure-3: Showing year wise rainfall and dengue fever cases in Punjab, Pakistan

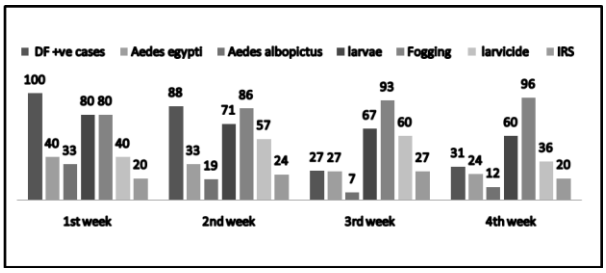

Figure-4: Showing week wise correlation between dengue fever cases, vector density and control activities in Punjab, Pakistan.

DISCUSSION

As reported that the dengue fever was earlier restricted to urban/semi-urban centres, but now can be seen in rural areas as well (3). The same has been observed by the analysis of data during 2008 and 72 cases out of 1382 cases were reported from rural areas. Land use/land cover types and climate, play significant role in dengue cases as reported by several researchers (3), same observation has been made by author in Punjab that from agricultural areas upper Punjab more cases have been noted.

By the time a person infected with dengue virus develops fever the infection is widely disseminated to many people. The virus is found in serum or plasma, in circulating blood cells and in selected tissues, especially those of the immune system, for approximately 2-7 days, roughly corresponding to the period of fever (2). According to the development period from egg to human disease, there is a time lag of about one month that leads to DF/DHF cases occurring during 7-45 days. The duration of larvae stages to adult is 7-12 days and the lifespan of for female mosquito is about 8 to 15 days, meantime the virus develops in the mosquito for a period of 8–10 days (23). The monthly number of cases reported in Punjab showed the same pattern and maximum cases have been reported in November and December 2008, despite the decrease of temperature due to time lag pattern. Thus, DF/DHF cases at time *t* (in month i.e. May) depends on others factors at time *t-1* (one month before *t* i.e. *t-1* or the month April). In this empirical relation, the regression coefficients represent the independent contributions of each variable to the prediction of the dependent variable.

CONCLUSION

This paper has offered some useful information related to the dengue incidence. Analysis of the climatic factors such as rainfall, temperature and humidity with the dengue incidences has revealed that dengue generally occurred when average temperature rose above normal. It also occurred when the rain-fall was comparatively lower and humidity was higher than average. An analysis of physio-environmental factors such as land use/ land cover types with dengue incidence was carried out. The aim of this analysis was not only to find the effect of physio-environmental factors on dengue incidences but also to find influence of these factors in quantitative terms. It was found that built-up areas have highest influence and constitute the highest risk zones. The agriculture areas offered the second level of high-risk influence. Water bodies posed also significant risk. Forest areas almost do not have any influence on the dengue risk zonation. This will help in focusing the preventive measures being applied on priority in very high and high-risk zones and save time and money.

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Original Article

Comparison of the Complication Between the Radical Neck Dissection & Selective Neck Dissection for the Patient of Oral Squamous Cell carcinoma

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ABSTRACT

Objective: To compare the outcome of the radical neck dissection and selective neck dissection for control of the disease in those patients who have their nodal involvement localized to level I, II, III.

Study Design: Prospective Randomizing Study.

Place and Duration of Study: This study was conducted in Oral and Maxillofacial Surgery Department, Mayo Hospital, Lahore from 1st January to 31st December 2001.

Materials and Methods: The study was conducted in dental section, Mayo hospital, Lahore. Thirty patients of squamous cell carcinoma of oral cavity were selected and randomly divided into two groups. Group I was subjected to selective dissection of the tumour while group II was subjected to radical neck dissection. Postoperative complications were recorded each follow up visit.

Results: Post operatively, in group I secondary hemorrhage occurred in 26.7% while in group II, it occurred in 40.0%, group I showed delayed healing due to infection in 46.7% while in group II, it was 73.3 %. In group I and group II, there was no recurrence after 1 month, 3 month and 6 month. After 9 months recurrence was noted in groups. It was 20% in group I while 6.7% in group II.

Conclusion: Selective –neck dissection should be preferred in the patient of oral squamous cell carcinoma with level I,II, III lymph node involvement as compared to radical neck dissection however recurrence rate is higher in patients undergoing selective neck dissection as compared to patients undergoing radical neck dissection.

Key Words. Oral squamous cell carcinoma, Radical neck surgery, selective neck, dissection.

INTRODUCTION

Oral squamous cell carcinoma is the 6th most common cancer world wide.[1] Head and neck malignancies also represent 7% of newly diagnosed cancers.[2]

The treatment of the neck in patients with squamous cell carcinoma of the head and neck region continues to be one of the most controversial issues in head and neck oncology. The evolution of the treatment of the neck is a good maximize tumor control and minimize morbidity to each patient with the passage of time.[3]

The radical neck dissection remains the basic tool for managing cervical metastasis.[4]

The radical neck dissection is defined as the en block removal of the lymph node bearing tissues for one side of the neck The resected specimen included the spinal accessory nerve, the internal jugular vein, and the sternocleidomastoid muscle.[3]

Removal of the primary tumor and the lymphatic system of the neck should be carried out to prevent further tumor dissemination to occur in any direction.[5]

The routine removal of the spinal accessory nerve was advocated later to decrease operating time and increase the certainty of the total neck node removal of the cervical lymph nodes.[6]

In the 1950s it was advocated that a cervical lymph adenectomy for cancer was not adequate unless all the lymph node bearing tissue of one side of the spinal accessory nerve, the internal jugular vein and the stemocleidomastoid muscle were included in the resection.[7]

Removal of this muscle facilitates access to the jugular vein and the removal of the lymph node bearing tissues of the neck. However, muscle removal is no longer justified for ease of dissection or exposure alone.[3]5 most head and neck surgeons today would agree that a radical neck dissection in not indicated in the absence of palpable cervical metastasis.[8]

Radical neck dissection is indicated when there are multiple clinically obvious cervical lymph node metastasis, there is a large metastatic tumor mass or there is multiple matted nodes in the upper portion of the neck.

Radical neck dissection carries a significant morbidity as many normal anatomical structures are sacrificed.[3]

In 1960s the surgeons modified the concept of the radical neck dissection by selectively removing only those lymph node groups that were based on the location of the primary tumor and were at highest risk of containing metastasis.[9]

Selective neck dissection is defined as en bloc removal of only those Lymph node groups which are most likely to contain metastasis depending on the location of the primary tumor.[3]

En bloc removal of the nodes at highest risk for metastasis is anatomically justified; it has the same therapeutic value and provides the surgeon with the same staging information as the more extensive radical and modified radical neck dissection and it is associated with less postoperative morbidity.[10]

The studies have demonstrated that the lymphatic drainage of mucosal surfaces of the head and neck region follows relatively constant and predictable routes.[11,12]

A study reported no metastasis in the nodes of the posterior triangle of the neck in radical neck dissection specimens, regardless of the site of the primary tumor and the presence or absence of metastasis in the jugular nodes.[13]

Different surgeons reported their experience with several hundred cases of neck dissection in which they spared the internal jugular vein and the stemocleidomastoid muscle during the neck dissection with out altering the disease-free rates.[14,15]

The decision of selection between these two is often dependent on the extent of regional disease or evidence of extra capsular spread of the tumor in to the adjacent structrure.[16]

Selective neck dissection produces minimal dysfunction of the trapezius muscle which is usually temporary and reversible.[16,17]

Preservation of sternocleidomastoid muscle renders good soft tissue cover over carotid vessels and result in normal neck contours. Excision of internal jugular vein results in decrease in venous return and risk of secondary hemorrhage.

If these structures can be preserved with out compromising the disease control, the morbidity of surgery can be minimized.

This study is intended to compare the outcome of the radical neck dissection and selective neck dissection for control of the disease in those patients who have their nodal involvement localized to level I, II, III.

MATERIALS AND METHODS

This was a randomized controlled trial conducted in the department of oral and maxillofacial surgery, king Edward Medical College /Mayo Hospital, Lahore

Consecutive sampling was done to collect the sample. Thirty patients were selected according to the set inclusion criteria from out patient department who presented with squamous cell carcinoma of oral cavity along with level I, II, III lymph node involvement. Patients with recurrent disease, evidence of distant metastasis, evidence of other malignancy along with oral tumor and those who were medically unfit for surgery were excluded from the sample so that bias in the study results can be controlled.

Informed consent from all patients was taken. The patients were ensured about the confidentiality of the information given by them. Patients were divided randomly into two groups irrespective of sex of patients under study. In group I, selective neck dissection along with excision of tumorous mass was done while in group II Radical neck dissection along with excision of tumorous mass was done. All cases in the study were followed up from 1st January 2001 to 31st December 2001 at intervals of one month, three months, six months and nine months. At each follow up visit outcome in terms of infection, recurrence, metastasis were checked and recorded.

RESULTS

Thirty patients enrolled from the out patient department were included in the study group according to the inclusion criteria. The patients were randomly divided into two groups: group I and group II.

In group I, surgical excision of tumorous mass along with selective neck dissection was done while in group II, surgical excision of tumorous mass along with radical neck dissection was done .

In group I, the mean age was 53± 16.2 years with a range of 40-65 years while in group II , the range was 33-47 year with a mean of 49± 11.8 years.

Post operatively, in group I secondary hemorrhage occurred in

26.7% while in group II, it occurred in 40.0%. Group I showed delayed healing due to infection in

46.7% while in group II, it was 73.3 %. Follow up was done over a period if 1 year on quaterly basis.

In group I and group II, there was no recurrence after 1 month, 3 months and 6 months. After 9 months, recurrence was noted in groups. It was 20% in group I while 6.7% in group II.

Table No.1: Showing means age and standard deviation (std deviation) of age in Groups undergoing selective neck dissection and radical neck Dissection.

N	Mean age*	Std deviation
Selective neck 15 Dissection	52.8	16.2
Radical neck 15 Dissection	49.1	11.8

Table No.2: Complications following selective and radical dissection of neck.

Complications	Selective dissection (n=15)		Radical Dissection (n=15)	
	Number	%age	Number	%age
Hemorrhage*	4	26.7	6	40.0
Delayed healing:	7	46.7	11	73.3
Metastasis after:				
3 Months	0	0.0	0	0.0
6 Months	0	0.0	0	0.0
9 Months	3	20.0	1	6.7

*Chi-square test with n-1, df, ($p<0.05$)

DISCUSSION

This study was conducted in oral and maxillofacial surgery department, Mayo Hospital, Lahore from 1st January to 31st December 2001.

Total number of 30 cases were selected and divided at random in two groups irrespective of sex of patients under study, comprising of 15 cases in each group. Group I under went selective neck dissection along with surgical excision of tumorous mass while radical neck dissection along with surgical excision of tumorous mass was done in group ll.

The main purpose of this study was to compare post operative complication like secondary haemorrhage, delayed healing, shoulder prop and recurrence in both surgical procedures and to find out the best surgical option for the management of cervical lymph node metastasis.

Leipzig et al studied 109 patients, who had undergone various types of neck dissection, utilizing preoperative and postoperative observations of shoulder movement. They concluded that any type of neck dissection may result in impairment of function of the shoulder. They noted that dysfunction occurred more frequently among those patients in whom the spinal accessory nerve was extensively dissected or resected.[18]

In 1985, Sobol et al. performed a prospective study in which preoperative and postoperative measures of shoulder range of motion were compared. Shoulder range of motion was better in patients who underwent a nerve-sparing procedure than in patients who had a radical neck dissection.[17]

In our study spinal accessory nerve was sacrificed only in group II(radical neck dissection) while in group l (selective neck dissection) there was no such complication.

Byers RM (1985) concluded that obstruction of one or both jugular veins, particularly when combined with lymphadenectomy, results in lymph oedema of the face.[19]

In our study, there was no such complication like lymph oedema of the face due to the obstruction of the jugular vein in both groups but both groups showed secondary haemorrhage which was 26.7% in groupl (selective neck dissection) while 40.0% in grop ll (radical neck dissection).

Hirate RM, Jaques DA et al , (1975) concluded that the combination of infection and local ischemia of skin or mucosa may result in wound infection, suture line break and flap necrosis.[20]

In our study there was no such complication like ischemia of skin or mucosa, flap necrosis except, in group l (selective neck dissection),delayed healing occurred due to infection in 46.7% while delayed healing, due to infection, occurred 73.3% in group ll (radical neck dissection).

Raymond J. Fonseca (2000) documented that even with T1 and T2 lesions, selective neck dissection improved the 5 year survival rate to 86% of patients as compared wit only 55% in a group who underwent radical neck dissection only after nodal disease became recognized.[21]

Casumano RJ, Persky MS concluded that the squamous cell carcinoma has a high recurrence rate. 89% of patients showed locoregional recurrence with in 2 years of therapy.[22]

In our study, metastasis along with recurrence occurred in 4 patients out of 30 in which 3 patients were in group l (selective neck dissection) and 1 patient in group ll (radical neck dissection.

In group l (selection neck dissection), 3 patients showed the metastasis at the level lV in which 2 patients underwent radical neck dissection but 1 patient refused for second surgery, was referred to radiotherapy department.

In group II (radical neck dissection), 1 patient showed the metastasis at level V, refused for second surgery, was referred to radiotherapy department.

There are some limitation in our study like small sample size and short duration of the study. To further look into the matter we need large sample size and longer follow up duration to find exactly the late compilations and recurrence in these patients.

CONCLUSIONS

Selective –neck dissection should be preferred in the patient of oral squamous cell carcinoma with level I, II, III lymph node involvement as compared to radical neck dissection due to the following conclusions drawn on the basis of this study:

1. Post-operative complication rate is less in patients undergoing Selective neck dissection as compared to patients undergoing Radical neck dissection.
2. Reccurence rate is higher in patients undergoing selective neck dissection as compared to patients undergoing radical neck dissection.
3. Overall prognosis of the patients undergoing selective neck dissection was better even after the recurrence, as radical neck dissection could be done in that case as salvage procedure.

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Original Article

Urinary Tract Infections (UTI) among Females Caused by Staphylococcus Saprophyticus

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ABSTRACT

Objective: Staphylococcus saprophyticus is a uropathogen frequently isolated from young female outpatients presenting with uncomplicated urinary tract infections.[1] Antibiotic resistance in uropathogen is increasing worldwide in out patients as well as hospitalized patients [2]

Study design: cross-sectional study.

Place and Duration of Study: The urine specimens were obtained from Nephrology, Urology and Gynecology / Obstetric and outpatient departments of JPMC, Karachi for three years. They were processed in the Department of Microbiology, Basic Medical Sciences Institute, Jinnah Postgraduate Medical Centre, Karachi from May 2003 to May 2005.

Material and Methods: The proper and necessary records of the patient were maintained, then the samples were processed by the standard methods. Blood agar plates and MacConkey's agar plates were used for culture. The biochemical tests were done by using different sugar media, TSI, Simon citrate agar, urease, indole and MRVP tests

Result: Out of 175 urinary pathogens isolated from female patients complaining from symptoms of UTI, 28 (16%) yielded Saprophyticus predominantly in pure culture and in high counts. In the age group of 18-28 years, this organism was found in 10 (36%), while in the age group of 29-39 years it was found in 8 female patients i.e. it was 28%.

Conclusion: Hence it is observed that as the age advances Staph saprophyticus becomes a rare finding so it is not a common organism in elderly males as well as females of all ages. But the sensitivity pattern must be seen to commonly use antimicrobial agents for proper and timely therapy.

Key Words: UTI, S. saprophyticus,

INTRODUCTION

Urinary tract infection is one of the most common condition seen in female patients in general practice[3]. These infections affect 50% of women at least once in their lives, and more than 20% of infections are resistant to trimethoprim and cephalosporins and 50% to amoxicillin[4].

Staphylococcus saprophyticus was the second most common cause of UTI in young sexually active females without known pre-existing kidney disease or preceding manipulation of the urinary tract. If bacteria are present on the vaginal introitus and urethra, sexual intercourse can facilitate inoculation of bacteria into the bladder by factors such as spermicides[5] The organisms were rarely found as a contaminant in urine cultures. Simple adequate laboratory identification may be based on resistance to novobiocin (disc diffusion test), absence of hemolysis and coagulase and intense pigment production[6].

The management of uncomplicated symptomatic UTI in the female population has been the subject of several randomized controlled trials. Most studies exclude the very elderly and focus on the younger adult population. UK guidelines advocate that Trimethoprim should be used as the first-line antibiotic in uncomplicated symptomatic UTI in females[7,8,9].

MATERIALS AND METHODS

The urine specimens were obtained from Nephrology, Urology and Gynecology / Obstetric and outpatient departments of JPMC, Karachi during the period of May 2003 to May 2005. Two hundred and fifty female patients between the ages of 18 – 70 years were included in this study. All had having symptoms suggestive of UTI and not taking any chemotherapeutic agents. Conventional identification methods based on biochemical characteristics can efficiently identify S. saprophyticus[10]. The patients of all ages were divided into the following groups:

Group 1 = 18-28 years
Group 2 = 29-39 years
Group 3 = 40-50 years
Group 4 = 51-61 years
Group 5 = ≥ 62 years

Bacteriological Methods

On receiving the urine specimens from the patients, they were immediately refrigerated at 4 to 6°C to avoid contamination and then processed for culture within 2-3 hours of collection.

Urine culture

Urine was inoculated onto blood agar and CLED agar by means of Calibrated loops (0.01 ml). The plates were then incubated at 37°C for 24 hours. Count of $\geq 10^5$

bacteria/ml in pure culture was considered as significant in symptomatic patients.

Other bacteriological Methods

The coagulase test was performed as a slide test method. The test for DNAs activity was done on DNAs agar (Oxoid). The glucose fermentation test was performed and found positive for it. Beside this Novobiocin sensitivity test was also performed accordingly, as the strain was resistant. So the organism was found to be Staphylococcus saprophyticus. All the biochemical tests are shown in table 4.

RESULTS AND OBSERVATIONS

For the period of three years, total 250 female patients were contacted who were complaining of symptoms of urinary tract infection (UTI). Out of 250 female patients, 175 (70%) patients yielded significant bacteriuria i.e. $\geq 10^5$ bacteria/ml (Table 3). The frequency of Staphylococcus saprophyticus among bacteriuric females in different age groups showed great variation as shown in table 1. It was highest in the groups 18-28 years and 29-39 of age (36% and 28% respectively). Ultimately the frequencies decrease as the age of the patient increases.

Table No.1:Distribution of urinary tract infection cases accordint to age in female patients

Name of organism	18-28 years	29-39 years	40-50 years	51-61 years	≥ 62 years
Staph. Saprophyticus	10 (36%)	8 (28%)	05 (18%)	03 (11%)	02 (7%)

Table No. 2: Antimicrobial sensitivity (%) of staphylococcus saprophyticus

Drugs	Sensitive	Resistant
Ampicillin (10µg)	80.00	20.00
Ceftriaxone (30µg)	65.50	34.50
Nitrofuradantoin (30µg)	100.00	0.00
Cephalothin (30µg)	100.00	0.00
Ceftazidine (30µg)	66.60	33.33
Trimethoprom (5µg)	33.33	66.67
Cefotaximne (30µg)	69.50	30.50
Tetracycline (30µg)	60.00	40.00
Augmentin (20/10µg)	90.00	10.00

Table No.3: Distribution of bacterial growth from urine of female patients with urinary tract infection

Groups	No. Tested	Positive Culture	
		Total	Percent
Female	250	175	70.00
Male	250	75	30.00

Staphylococcus saprophyticus grow readily on blood agar and produce somewhat irregular yellow white colonies. Staphylococcus epidermidis developed distant, white colonies on the same medium. All were coagulase and DNAs negative. No growth occurred on MacConkey's agar. All strains were resistant to novobiocin, i.e. the zones of inhibition from a 5µg novobiocin disc was < 16 mm in diameter. For novobiocin sensitive Staph. epidermidis, on the other hand, the zone of inhibition were ≥ 25 mm in diameter.

The susceptibility of Staph saprophyticus to antibiotics is summarized in table 2. They were highly sensitive to Ampicillin (80%), Nitroduradentoin (100%), Cephalothin (100%) and Augmentin (90%). Some strains were resistant to Ampicillin (20%), Ceftriaxone (34.5%), Trimethoprim (66.67%), Ceftazidine (33.3%), Cefotaxime (30.5%), Tetracycline (40%) and Augmentin (10%).

Table 3 shows the distribution of bacterial growth from urine of female patients with UTI from total 500 urine specimens only 250 samples from female were tested. Out of these 250 urine samples only 175 were positive culture i.e. 70%. While table 4 shows the biochemical tests for Staphylococcus saprophyticus.

Table No.4: Biochemical tests for staphylococcus saprophyticus

Coag-ulase	Catalase	DNAse	Mann-itol	Sucrose	Novobiocin (5µg disc)
-ve	+ve	-ve	+ve	-ve	Resistant

Table No.5: Distribution of associated symptoms of UTI in female patients

Symptoms	Female	Percentage
Frequency	142	81
Burning micturition	131	75
Flank pain	121	69
Dysuria	66	38
Pyuria	36	20
Hamaturia	35	20

Table No.6: Urinary Pathogens Isolated from female patients complaining of symptoms of urinary tract infection (N=175)

Urinay Pathogen	Positive	Percentage
Escherichia coli	55	31.42
Staphylococcus saprophyticus	28	16.00
Klebsiella	25	14.28
Proteus	18	10.20
Staphylococcus epidermidis	20	11.42
Staphylococcus aureus	16	9.14
Pseudomonas	10	5.71
Enterococci	01	0.69
Enterobacter	02	1.14

Table 5 shows the distribution of associated symptoms of UTI in female patients. Females who suffered from pyuria and haematuria were 20% each.

Finally table 6 shows the urinary pathogens isolated from female patients complaining of symptoms of urinary tract infection. This table also shows Staphylococcus saprophyticus and is the second most common urine isolate.

DISCUSSION

The study was conducted in the Department of Microbiology, BMSI, JPMC, Karachi. In this study 70% of female and 30% male patients having symptoms of UTI were found to have significant bacteriuria as shown in Table 3. The higher incidence of UTI in female patients as compared to male patients is similar to those found in the study carried out by Thomas[11].

In present study the second most common urine isolate found in females was Staph. saprophyticus (16%) as shown in Table 6 which is according to Nathanial[12] who reported that Staphylococcus saprophyticus (17%) is the second most leading cause of UTI among females during child bearing age. This study also correlates with the present study. Similar reports have been published by various workers. Bailey [13] isolated 16.7% Staphylococcus saprophyticus from urine of women of child bearing age, and Smith et al.[14] found that 14.28% of UTI in females of child bearing age were caused by Staphylococcus saprophyticus. Wallmark et al[5] reported that the prevalence of Staphylococcus saprophyticus UTI in females was 22% and the incidence being higher in the younger age group i.e. between the ages of 16 and 25 years which was 41.7%. In my study in the age group 18-28 years, the percentage of the infected females, we came across was 36% and in the age group 29-39 years the percentage of the infected females were 28% as shown in Table 1. Hence all the above studies correlate with that of mine.

CONCLUSION

Staphylococcus saprophyticus is the second most common bacteria as an etiological agent of urinary tract infection in females of child bearing age but it is a rare urinary pathogen in the male population. It has been observed that Staphylococcus saprophyticus was seen to be sensitive to most of the antimicrobial agents commonly used in UTI. It is therefore concluded that when Staphylococcus is isolated from the urine, it should not be ignored as a contaminant but sensitivity pattern must be seen to commonly use antimicrobial agents for proper and timely therapy.

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Original Article

Comparison of Methods for Diagnosing Bacterial Vaginosis

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ABSTRACT

Objective: To determine the laboratory method that best predicts Bacterial Vaginosis.

Study Design: Descriptive Observational study

Place and Duration of Study: This study was conducted in the Department of Microbiology, Sindh Medical College (DUHS) and Basic Medical Sciences Institute, Jinnah Postgraduate Medical Centre, Karachi from Jan. 2005 to Feb. 2007.

Materials and Methods: A total of 150 randomly selected women were included in this study from OPD of various tertiary care hospitals and & family planning clinics of the city. In this study we compared and calculated the sensitivity, specificity and predictive value of positive and negative tests for wet mount, Gram stained vaginal smears and Gardnerella vaginalis (G.vaginalis) cultures with clinical sign Amsel's criteria (Gold standard), for the diagnosis of bacterial vaginosis(B.V).

Results: We diagnosed 54 (36%) cases of bacterial vaginosis by Gram's staining method, 61 (41.7%) cases by Wet Mount method, and 42 (28.0%) cases by Amsel's criteria and 47 (31.3%) cases by culturing.

Conclusions: Amsel's criteria were comparable with other laboratory tests for diagnosis of BV. Culture was laborious, expensive and least sensitive method.

Key Words: Bacterial vaginosis, Amsel's clinical criteria, Gram staining

INTRODUCTION

Bacterial vaginosis (BV) was initially recognized as a vaginal syndrome by Gardner and Duke[1]. They associated bacterial vaginosis with the isolation of Haemophilus vaginalis, later named it Corynebacterium vaginale and currently named Gardnerella vaginalis[2] . However, the microbiology of bacterial vaginosis is complex and involves organisms other than G.vaginalis. Large quantities of not only G.vaginalis but also anaerobic bacteria[3,4,5] and Mycoplasma hominis[3,4,6] can be recovered from women with bacterial vaginosis.

BV is the most common cause of malodourous vaginal discharge in females of child bearing age.[6,9,11].BV is characterized by alterations in vaginal flora. Normally, Lactobacilli constitute 95% of bacteria in the vagina, but in BV, Lactobacilli are absent or severely reduced and the concentration of other bacteria is increased by 10^2-10^4. The patho physiology of this syndrome is better understood, but little progress has occurred in identifying the casual factors.[8,12] Now BV is increasingly recognized as directly related to a number of serious obstetric and gynecological complications.[5,7,10]

G.vaginalis can be isolated from the vagina of 20% to 40% of women without bacterial vaginosis[1,4,6]. Symptoms of bacterial vaginosis are nonspecific, and has been associated with severe sequelae[13,14] and diagnosis should rely on confirmatory tests[15,16,17]

MATERIALS AND METHODS

A total of 150 randomly selected women were included in this study. They were grouped as:50 non-pregnant females complaining of discharge. 50 pregnant females, complaining of discharge.The third group included 50 Pregnant / Non-pregnant females not complaining of discharge (controls).The control groupwho had no sign and symptoms of vaginal discharge ,was examined and studied in an identical manner. They were matched for age and socioeconomic status. All females with history of previous abortion, preterm delivery or premature rupture of membrane and infertility were included. Females attending family planning clinic were also included. The exclusion criteria were females taking antibiotic, using vaginal douches, tablets or suppositories within the preceding 14 days. Women who had sexual intercourse within 24 hours were also excluded[18,19]

RESULTS

The results for the diagnosis of bacterial vaginosis by Amsel's criteria, culture, Wet Mount and Spiegel's criteria (Table 1). Statistical analysis showed that all the 4 methods could be used as a means for the diagnosis of bacterial vaginosis ($p<0.01$).

Table I: Shows different methods employed for the diagnosis of BV. In both the groups the wet mount for clue cells was more diagnostic 61(41.7).In group not complaining of vaginal discharge it was19 (38%) and in

group complainingit was42(43%). The second method was Gram's method which was 37(37%) in females complaining of discharge and17 (34%) in females not complaining of discharge. So over all it was present in 54(36%). The culture was least diagnostic and was only 31.3% diagnostic.

Table No.1: Methods used for Diagnosis of Bacterial Vaginosis (n=150)

Patients	Amsel's Criteria (Gold standard)	Wet Mount	Gram's Staining	Culture (HBT)
Not complaining vaginal discharged (n=50)	08 (16.0%)	19 (38.0%)	17 (34.0%)	16 (32.0%)
Complaining vaginal Discharge (n=100)	34 (34.0%)	42 (43.0%)	37 (37.0%)	31 (31.0%)
Total (n=150)	42 (28.0%)	61 (41.7%)	54 (36.0%)	47 (31.3%)

Table 2: Shows the comparison of the sensitivity, specificity, positive and negative predictive value of wet mount, gram staining and culture as compare to Amsel's criteria. According to this the positive predictive value, negative predictive value and the sensitivity and specificity of Wet Mount were 62.3%, 95.5%, 90.5% and 78.7% respectively. Those of Gram's staining were 72.2%, 96.9%, 92.9% and 86.1% respectively. The culture was 64.3% sensitive and 81.5% specific, the positive predictive value was 57.4% and the negative predictive value was 85.4%.

Table No. 2: Sensitivity, Specificity, Positive and Negative Predictive value of wet mount, gram staining and Cultures as compare to amsel's criteria

	Wet mount	Gram's staining	Culture
Sensitivity	90.5%	92.9%	64.3%
Specificity	78.7%	86.1%	81.5%
Positive Predictive Value	62.3%	72.2%	57.4%
Negative Predictive Value	95.5%	96.9%	85.4%

Table 3: Shows if the four diagnostic methods were compared for the reliability, time consumption and approximate cost per test and labor to perform these tests. The Amsel's criteria was easy to perform and cheap method as compared to culture method which is time consuming, costly and quite labor intensive.

Table No.3: Reliability, Time Consumption and Approximate Cost of the Test Method for Detection of BV

Test Method	Reliability		Time Consumption	Cost Per Test	Labor
	Sensitivity (%)	Specificity (%)			
Amsel's	Standard or Reference Method		3 Min	Cheap	Very easy to perform
Wet Mount	90.5	78.7	5 Min	Cheap	Easy to perform
Gram's Staining	92.9	86.1	10-15 Min	Cheap	Easy but requires experience
Culture	64.3	81.5	24-72 Hrs	Costly	Laborious

A thin, homogenous, foul smelling discharge that is adherent to the vaginal walls is characteristic of B.V. The discharge should not be confused with cervical mucus, which is characteristically clear, indicating the absence of an inflammatory response A milk like consistency that is distinctly nonfloccular, nongranular, nonstingy and not clumped is most characteristic. The discharge is clear to grey in color but has occasionally been reported as green, yellow or even white[1,4,18] The volume of discharge varied from scanty, moderate to profuse. These criteria were used to define a normal or abnormal discharge (bacterial vaginosis) in all subsequent results and analysis .[18]

A detailed clinical history of each woman was taken and their two high vaginal swabs were collected. One swab was suspended in a sterile tube containing 0.5 ml of sterile physiological saline and second swab was suspended in Stratus transport medium to be used for culture. The vaginal swabs were used for gram staining, for the determination of the pH of the vagina and for the Whiff test. Diagnosis of bacterial vaginosis was done by Amsel's criteria, Wet Mount Gram staining and by culture. The parameters that are necessary to decide the efficacy of the diagnostic tests, namely positive predictive value, negative predictive value and sensitivity and specificity were calculated in comparison with Amsel's criteria by considering it as the gold standard. Statistical analysis was done by using the Chi Square test .In all statistical analysis,only P values<0.05 were considered to be significant.

Diagnosis by Amsel's criteria:

Amsel's composite criteria includes the presence of a homogeneous vaginal discharge, pH of the vagina being > 4.5, the presence of clue cells in gram stained vaginal discharge smears and a positive whiff test. According to Amsel, if 3 of the 4 criteria are positive, the patient has bacterial vaginosis [4,20]

Vaginal pH determination:
Vaginal secretion or discharge was collected from the lateral vaginal walls with a cotton swab and this was then transferred onto a strip of pH paper . This was compared with a standardized colorimetric reference chart to estimate the actual pH [21] .

Whiff test:
A drop of vaginal discharge was mixed with a drop of 10% potassium hydroxide which was taken on a slide. A fishy smell indicated a positive test [22]

Processing of sample:
The time period between collection of sample and inoculation was restricted to1 hour.

Wet Mount Examination:
One drop of sterilized saline suspension was applied on a glass slide and covered with slip. It was examine microscopically for clue cells (vaginal epithelial cells with characteristic stippled or granulated appearance) that is the vaginal epithelial cells with indistinct cell border obscured by the large number of coccobacilli . [19,23]

Lactobacilli were recorded as the predominant flora on wet mount if long morphologic types were judged to be the predominant form.

Clue cells:
The vaginal discharge was smeared on clean glass slides, air dried, heat fixed and stained by Gram's method. The vaginal epithelial cells which were completely covered by the gram variable coco bacilli so that their edges which normally have a sharply defined cell border became indistinct or stippled, were considered as the clue cells [24].

Diagnosis by culture:
The vaginal swabs were inoculated on selective differential Human Blood Bilayer agar medium with Tween 80 (HBT) culture media and incubated at 37˚C for 24 to 48 hrs in a candle jar to provide 5-10% co $_2$.(totten et al 1982) * Aerobes, facultative anaerobes and obligate anaerobes were identified by their colony morphologies, gram staining and standard biochemical reactions .[25,26] . Those women of whom the culture showed predominant growth of G.vaginalis or an anaerobe or both were considered as positive for bacterial vaginosis by culture

Diagnosis by Spiegel's criteria:
When the gram staining showed predominance (3 to 4+) of the lactobacillus morph type with or without the Gardnerella morph type, it was interpreted as normal. When the gram staining showed a mixed flora consisting of gram-positive, gram negative, or gram-variable bacteria and the lactobacillus morphotype was decreased or absent (0 to 2+), the gram staining was interpreted as consistent with bacterial vaginosis.[4, 21]

DISCUSSION

The goal of this study was to evaluate and correlate several clinical and microbiologic criteria that have been used for the diagnosis of BV. We were particularly interested in the diagnostic values of simple observations and procedure that could be carried out in the physician's office, and in the correlation between such office procedures and less costly and more readily available microbiologic test for BV.

In prior reports, individual laboratory methods of diagnosing bacterial vaginosis have been compared with clinical signs[27,18,28,29] However, multiple laboratory methods have not been compared with a single cohort of women. In the present study, we determined the vaginal flora of patients with bacterial vaginosis diagnosed by clinical signs, wet mount, gram stained vaginal smears and culture to document that each diagnostic method was associated with similar vaginal flora.

Results of this study agree with that of Amsel that majority of women who participated in the study remained free of any definite symptoms. [18,7]

In this study, each of Amsel's clinical criteria (homogenous discharge, positive whiff test, vaginal pH>4.5 and clue cells) were strongly correlated with wet mount, gram's staining and culture findings.

Donders [29] conducted a study to assess vaginal flora on wet mount and gram stained specimens in all cases. They found that wet mount is quick to perform but Gram stain is performed more in routine. There was easier recognition of lacto bacillary morph types on a wet mount than on gram stains which results in the loss of lactobacilli by the process of fixation or gram staining and recommended wet mount is cheaper and easier to perform for microscopy of vaginal smears rather than Gram staining. In this study it was also seen that wet mount was (41.7%) and gram stain(36%) positive in total cases.

In study by [30,31] it was highlighted that Gram staining is gaining acceptance as diagnostic test of choice. It is simple for the physician who only has to smear a glass slide and allow it to air dry.

This study confirmed the common and established finding that gram method of staining is simple, inexpensive, sensitive, specific and reproducible way to diagnose[32]

Our study reinforces the finding that vaginal cultures have the positive predictive value and is less than 60%.So cultures are not recommended[33,19,] Vaginal cultures for G. vaginlis is not often the primary

laboratory test. The usefulness of these cultures is doubtful. In our study G.vaginalis could be recovered from 31.3% of women. So the incidental finding of G.vaginalis from a routine cultures should not be used unless clinical signs and/ or Gram staining shows its presence[33]

In this study the presence of other organisms was not noted,as this study was oriented towards detection of G.vaginalis, and should not be interpreted as a study of the complete normal flora.This study also agrees with previous reports of [34,35] that G.vaginalis can be found in vaginal secretions from some asymptomatic women.

This study agrees with[35] that isolation and identification in routine laboratory is both time consuming and difficult. So diagnosis most usually be made on the basis of Amsel's criteria and on the characteristic microscopic appearance of wet mout and Gram stained smears of the discharge [35,10]

CONCLUSION

The importance of an accurate, reproducible, and inexpensive laboratory method to diagnose bacterial vaginosis has increased with the recent association.Use of Amsel's clinical criteria and Gram staining especially in primary care unit and laboratories is recommended.

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Original Article

Frequency of Malignant Tumors : Reported at a Public Sector University Hospital A Five Year Data Based Analysis

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ABSTRACT

Objective: To determine the frequencies of common malignant tumors in relation to the variables of age, sex, histology and site of tumor.

Study design: A cross sectional study.

Place and Duration of Study: The study was conducted at the Department of Pathology Dow Medical College Dow University of Health Sciences Karachi from January 2006 to December 2010.

Materials and Methods: The specimens and relevant data was collected from pathology report forms by examining 5μ m thick slides prepared from paraffin blocks and staining with H&E and special stains e.g. PAS, Giemsa, Trichrome,and histopathological diagnosis was confirmed by microscopy.

Statistical analysis was done on SPSS (Ver 16).

Results: A total of 461 cases of malignant tumor were included from January 2006 to December 2010. Adenocarcinoma were 227 (49.2%). Squamous cell carcinoma with 190 cases (41.2%) were followed by Basal cell carcinoma 18 cases (3.9%). The most common sites of malignancy were Oral cavity with 102 cases (22.1%), Breast 96 cases (20.8%) followed by Cervix 40 cases (8.7%).

Out of 461 cases, 171 were male (37.1%) and 290 (62.9%) were female.

Conclusion: As in most developing countries, incidence of cancers is increasing in Pakistan. It is empirical that updated information on the frequency and epidemiology of malignant tumors be carried out. This will be beneficial in future health planning of the population at risk.

Key Words Malignant tumors, squamous cell carcinoma, adenocarcinoma, frequencies

INTRODUCTION

An accurate assessment of the cancer problem in most developing countries like Pakistan remains a difficult exercise[1]. According to WHO estimates Pakistan should have 175000 new cancer patients annually[2]. But due to lack of proper cancer registry the above data cannot be confirmed. Such being the burden of the disease it is empirical that statistical analysis should be available[3]. Pattern of malignancies varies around the world[4]. Even within the country different patterns are seen in different regions[5]. Variations can be a result of recognized environmental factors[6]. These include racial, socio-economic and cultural variations[7]. The era of molecular biology and oncology has enlightened us with a better understanding of cancers[8]. Valuable epidemiological leads regarding etiology of a variety of cancer can also be inferred by statistical evalution[9]. Characteristic site specific distribution of cancer in different ages and sexes is also contributory to the changing trends of incidences of various types of cancers[10].

The purpose of this study was to describe the frequency and pattern of different malignant tumors being reported at a public sector teaching hospital. Further, the results of this study can provide data for epidemiological interest and help compare the local data with other parts of the country and elsewhere.

MATERIALS AND METHODS

The study was conducted during five years from January 2006 to December 2010, at the Department of Pathology Dow Medical College Dow University of Health Sciences Karachi. Department of Pathology receives cases from Civil Hospital Karachi and Lyari General Hospital Karachi, which are tertiary care hospital. A total of 461 cases of were included in the study with their proformas displaying information regarding name, age, sex and site of the lesion.

The paraffin fixed specimens after gross examination were sectioned. 5μ m thick slices were prepared from each paraffin block and were subjected to Haemotoxylin and Eosin stain. With special stains e.g; PAS,Giemsa and Trichrome used when and where required. The slides were seen under scanner (X10), low power (X40) and high power (x100) magnifications of the compound microscope. Statistical analysis was done on SPSS 16.

RESULTS

A total of 461 cases of malignant tumor were included. Out of 461 cases of malignant tumor 171 were male (37.1%) and 290 (62.9%) were female, with a mean age of 48.21 (+/- 1.39 S.D) table1. the commonest histopathologic type of malignant neoplasms were

adenocarcinoma 227 (49.2%) Squamous cell carcinoma with 190 (41.2%) followed by Basal cell carcinoma 18 (3.9%). The commonest sites of malignancy was Oral cavity with 102 (22.1%), Breast 96 (20.8%) and Cervix 40 (8.7%). The frequencies of all malignant tumors is shown in table2.The distribution of malignant tumors according to sex and site given in table 3

Table No.1:Gender Distribution of all Malignancies

Gender	Number	Percentage (%)
Male	171	37.1
Female	290	62.9
Total	461	100

Table No.2: Distribution of all malignant tumors in both sexes

Diagnosis	Male	Female	Total
Squamous cell carcinoma	96	94	190
Basal cell carcinoma	12	06	18
Adenocarcinoma	45	86	131
Invasive ductal carcinoma (adenocarcinoma)	00	83	83
Intraductal carcinoma	00	13	13
Transitional cell carcinoma	02	01	03
Osteosarcoma	02	00	02
Chondrosarcoma	00	01	01
Seminoma	03	00	03
Small cell carcinoma	01	00	01
Malignant Brenner tumor	00	01	01
Dysgerminoma	00	02	02
Choriocarcinoma	00	02	02
Soft tissue sarcoma	06	01	07
Lymphoma	04	00	04

DISCUSSION

Cancer is still one of the major health problem worldwide.[11]the era of modernization has also predisposed to a large number of risk factors leading to increase incidence of frequency of cancers.[12]according to WHO reports with an increase of upto 10 million new cases worldwide ,half of it occurs in developing regions of the world.[13]

This study was conducted to give a baseline regarding the pattern of malignancies evaluated at Pathology Department of Dow medical college Dow University of health Sciences,which caters Civil Hospital ,Karachi's second largest public hospital,and Lyari general hospital.

The results of our study showed that malignancies were frequent in females(63%) than in males(37%),probably because of large number of breast cancers and carcinoma of cervix in this group.This is similar to studies carried out in Yemen in 2006 [14] and Nizamuddin *et.al*.[15]

Table No.3:Tumor distribution according to site

Site of tumor	Male	Female	Total
Oral cavity	62	40	102
Breast	00	96	96
Cervix	00	40	40
Esophagus	26	09	35
Skin	18	10	28
Colo-rectal	08	12	20
Ovaries	00	19	19
Metastatic	02	14	16
Prostate	15	00	15
Stomach	07	07	14
Thyroid	02	12	14
Uterus	00	13	13
Gall bladder	04	04	08
Soft tissues	05	01	06
Vulva/vagina	00	05	05
Testis	05	00	05
Bone	04	01	05
Liver	02	02	04
Ileo-caecum	01	03	04
Lymphoma	04	00	04
Urinary bladder	02	01	03
Parotid gland	02	01	03
Pancreas	02	00	02
Total	**171**	**290**	**461**

The tumor of oral cavity ,102 cases(22.1%) was the commonest malignancy according to the site .The incidence is much higher than those from other parts of the world [16]. World wide the incidence of oral cancer is further increasing, rendering the problem as a considerable component of the global burden of disease. This might be attributed to heavy consumption of betel quid(pan),catechu, lime, tobacoo mixed with flavoring agents(mawa, maenpuri, khaini)[7] A very popular material used in the lower socio economic population of Karachi[17].Squamous cell carcinoma(22.1%) being the major histopathological diagnosis with a male 62cases(60%) predominance as compared to females 40 cases(39%)

In this study the maximum number of cancers in females were breast cancers, 96 cases(20.8%),the majority being Invasive Ductal Carcinomas NOS, 83 cases(86%).The frequency of breast cancers was three times higher as compared to a study in India and USA[18]. Incidence of breast cancer in Pakistani female is highest for any Asian population[19] except for Jews in Israel .The enormous importance of breast cancer related to mortality and morbidity accounts for a better understanding of its molecular pathogenetic mechanism and etiological linkage with environmental factors other than genetic implications.[20]

Carcinoma of cervix (8.9%) was next common malignancy in females ,with squamous cell carcinoma

being the major type. These results are similar to study in India [21].The high incidence may be due to lack of awareness ,screening facilities and early marriages with multiple pregnancies[22]

Pattern of gastro- esophageal, intestine, liver and gallbladder ranked in descending order of frequency as esophaegeal cancer was (7.6%),this is similar to a study in Iran[23].Esophaegeal carcinoma of the upper third were more common, being related to environmental risk factors , tobacco, alcohol and use of spicy food. Colorectal cancers 20 case(4.3%) and Gastric cancer14 cases(3.0%), is similar to other studies[24]

Skin cancer (6.1%) with basal cell carcinoma of the eyelid 18 cases(64%) is similar to study.[25,26].

The incidence Ovarian cancers (4.1%) , is low as compared to western countries[27] .Majority were adenocarcinomas, 2 cases of dysgerminomas and 1 case of malignant brenner were also diagnosed.

Among the male genital system prostate cancer (3.3%) were seen which is similar to studies[28.]There were 3 cases(0.7%) of Seminomas.

Thyroid gland (3.0%) again presented as being more common in females, these results are in accordance with other studies[29].

Our study also revealed high frequencies of metastatic tumors 16 cases (3.5%).Majority of these tumors were diagnosed as adenocarcinomas (well differentiated). Metastatic tumors are an important challenging area in pathology[30].In the absence of a known clinically primary site, routine microscopy and special stains may give a clue to the cell linage but immunohistochemical evolution remains the key in determining the tumor origin[31]. Knowledge of metastasis is very important regarding treatment strategies and prognosis.

The frequencies of other tumors as shown in table 2, reveals, sarcomas of which soft tissue sarcomas constitute (1.5%) and osteosarcoma (0.4%) chondrosarcoma (0.2%).

CONCLUSION

The data presented in his study is not representative of community prevalence rates. They may be higher as compared to those reported in this study .The study aimed at providing a baseline data which can help in development of tumor registry, epidemiological studies and population screening program and awareness of masses.

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Original Article

Assessment of Self Medication in Female University Students of Pharmacy and Medicine-A Prevalence Study

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ABSTRACT

Objectives: To evaluate the tendency, incidence, relevant awareness, attitude and practice of self-medication in female students of pharmacy and medicine.

Background: Self medication is a common trait in those students who are studying medicine, pharmacy or other health sciences. Socio economic features, lifestyle status and awareness about the indications of the medicine are direct factors that affect the practice of self medication.

Study Design: Observational Comparative Study.

Place and duration of study: The study was conducted in three universities of Karachi, two institutes of pharmacy education and one institute of medical sciences from January 2011 to September 2011.

Participants and methods: A self-developed, pre-validated questionnaire containing open-ended and close-ended items was used for data collection. 460 female students (age 20-25) enrolled for study after informed consent and knowledge of the study purpose, filled in the questionnaire anonymously.

Results: The study based on 460 student shows that self-medication prevails for the OTC medicines (76.27%) and Prescription Only medicines (51.30%).The use of minerals and vitamins by self medication is 54.5%.The most common reason for self medication shown in 306 count is "previous knowledge of drug use".

Conclusion: The students of medical and pharmacy practice self medication to varying degree for both the OTC and Prescription Only medications. The easy access to medications promotes such practice, where as large expense of proper health care plays a pivotal role. This tendency with peril signifies the role of an effective and well regulated pharmaceutical care system with its essential components.

Key Words: Self medication, Prescription Only medicines, OTC medicines, Pharmacy Students, Pharmaceutical care system

INTRODUCTION

Self-medication is the selection and use of medicines by individuals to treat self-diagnosed diseases or conditions. It may be regarded as an important domain of healthcare. The practice of self medication is by which an individual or the ones responsible for that person, employ various means to chose and acquire one or more medications without proper medical evaluation and consultation, deciding for themselves how to use that drug for alleviation of certain symptoms or the probable cure of the disease."Self-medication involves sharing drugs with other members of the family and social group, using leftovers from previous prescriptions or disrespecting the medical prescription either by prolonging or interrupting the dosage and the administration period prescribed." [1] Studies have stated that, the practice of self medication moves patients towards greater independence in making decisions about management of minor illnesses, thereby promoting empowerment. However, it is associated with risks such as misdiagnosis, exceeding the appropriate dose, protracted use, drug, food & disease interactions and polypharmacy.

There can be prevalence of both irresponsible and responsible practice of self medication with different outcomes."Responsible self medication is the practice whereby individuals treat their ailments and conditions with medicines which are approved and available without prescription, and which are safe and effective when used as directed. Responsible self-medication requires that medicines used are of proven safety, quality and efficacy and medicines used are those indicated for conditions that are self-recognizable and for some chronic or recurrent conditions (following initial medical diagnosis). In all cases, these medicines should be specifically designed for the purpose, and will require appropriate dose and dosage forms."[3]

"The prevalence of self-medication among university students has been reported as 45% in Turkey, 88% in Croatia and 94% in Hong Kong. The prevalence rate of self-medication in Pakistan in 1995 was 51% and a past survey calculated the prevalence of self medication among university students in Karachi as 76%"[4] Another study based on university students have shown that they commonly perceive self medication to be time-saving, economical, convenient and provides quick relief in common illnesses however their knowledge about

appropriate self-medication is poor ,nevertheless the practice of self-medication was reported common and often inappropriate.[5]

It is usually noticed that students studying medicine and pharmacy are more implicated in the practice of self medication possessing various attitudes toward it. A review of self medication among medical students have shown that the students believed that it was appropriate to self-treat both acute and chronic conditions and that informal care paths were common within the medical profession. A concise review of several studies have shown that self-treatment is strongly embedded within the culture of both physicians and medical students as an accepted way to enhance/buffer work performance.[6]

MATERIALS AND METHODS

The aim of this survey study is to assess the magnitude, factors and the comparative aspects of self-medication among female students of pharmacy and medicine in three different higher educational institutes. This study has been designed after concise review of specified research regarding different traits of self-treatment and self-medication of prescription drugs from databases such as pubmed, IndexPharmacus, ResearchGate, Medline, PDB, BioMed central and EVISA. A descriptive cross-sectional and self administered survey was conducted on a sample size of students (N=460) in three universities, one for medical and two for pharmacy education .Study samples within each university were randomly selected clusters. A prevalidated questionnaire, containing open-ended and close-ended questions, was administered to the subjects which was to be filled anonymously. This was following the informed consent of the participants who were aware of the purpose of the study. The questionnaire was pretested and was devised from similar studies. It comprised of demographic detail, order of prevalence and practice and the substitute of reasons for this acquired behavior. A multilevel analysis with two levels (respondent and education type) was performed .Data was analyzed using SPSS version 19 and results expressed in counts and percentages. Pearson Chi square-test was applied to measure the dependency of either group of students on the most prevalent cause of self medication and $p < 0.05$ was considered significant.

RESULTS

Figure No.1: A comparative use of OTC drugs, Prescription Only drugs and vitamins and minerals is shown in Figure No.1. Self- medication with OTC medicines is 76% by both the pharmacy and medical students. The OTC medicine used after prescription by doctor is 24% in both cases. Self-medication with Prescription Only medicines in medical students is 50% and in pharmacy students is 53%. Figure No.1 shows that the use of OTC drugs with self medication is more than the use of OTC with prescription by doctor, in both the group of students (medical/pharmacy). Use of Prescription Only drugs with self medication is less than the use of Prescription Only drugs with prescription by doctor, in both the group of students (medical/pharmacy). The use of vitamins and mineral supplements, in medical students, by self medication is 52% and with Prescription by doctor is 48%. The use of vitamins and mineral supplements, in pharmacy students, by self medication is 57% and with Prescription by doctor is 43%. The use of vitamin and minerals by self medication is more than the use with prescription by doctors in both medical and pharmacy students.

Table No. 1: Prevalence of Self Medication in Respondents with Types of Medications

Types of medications	Respondent's Type			
	Medical		Pharmacy	
	Self Medi-cation	Prescrip-tion by Doctor	Self Medi-cation	Pres-cription by Doctor
Over the Counter	76%	24%	76%	24%
Prescription Only Drugs	50%	50%	53%	48%
Vitamin / Supplement	52%	48%	57%	43%

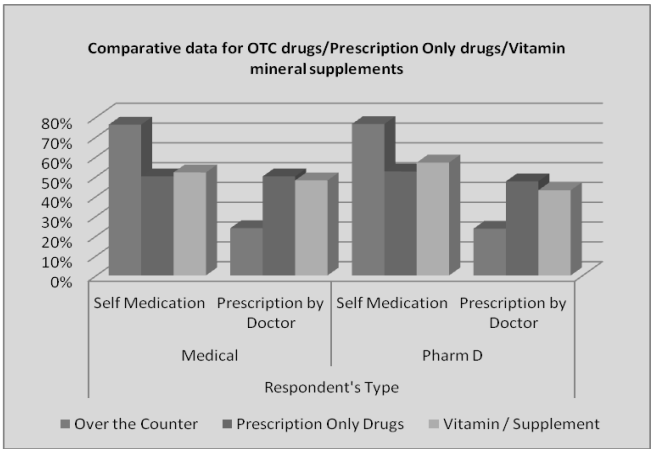

Figure No. 1: A comparative use of OTC drugs:

Table No. 2: Comparison of Causes for Self Medication in Respondent Type

Main Cause of Self Medication	Total	Respondent's Type	
		Medical	Pharmacy
Previous knowledge of drug use	67%	65%	68%
Easily available without prescription	17%	17%	18%
To avoid doctor fee/medical expense	9%	11%	7%
They think that the medicine is safe/lack of awareness	7%	8%	6%

Figure No. 2: In medical and pharmacy students self medication due to previous knowledge of drug use is 65% and 68% respectively. Self medication due to easy availability of drug is 17% in both groups. Self

medication to avoid expenses is 11% in medical and 7% in pharmacy students. Lack of awareness attributes to 8% of drug use in medicine and 6% in pharmacy students. Figure No.2 illustrates the main cause of self medication to be "Previous knowledge of drug use" 67% in all respondents.

Figure No.2: Main cause of Self-medication

Table No. 3: Main Cause of Self Medication * Respondent's Type Cross Tabulation Count

Main Cause of Self Medication	Respondent's Type		Total
	Medical	Pharmacy	
To avoid doctor fee/hospital expense	25	17	42
They know about the drug use by previous experience	149	157	306
They think that the medicine is safe/lack of awareness	18	14	32
Easily available without prescription	38	42	80
Total	230	230	460

The test result count show 42(To avoid doctors fee/medical expense), 306 (They know about the drug use by previous experience), 32 (lack of awareness), 80 (easy availability of the drug).

Table No. 4: Dependency of respondent type on main cause for self medication

	Value	DF	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.433(a)	3	0.488*
N of Valid Cases	460		
a 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.00.			

*Value greater than 0.05 shows no dependency but indicates a strong relationship between the two variables.

DISCUSSION

Both the groups of students are found to practice self-medication (Ref Table 1). Such a comparative study based entirely on medical and pharmacy female students focusing on their conduct, perspective and particular drive for self medication has not been reported before in Pakistan, although habits and attitude of general university students of both genders has been studied and stated. The gender implication might hold substance as treating children by means of self medication by mothers, is an increasing area of concern.[7-11] On the contrary, responsible self medication by mothers with appropriate consideration of all aspects (e.g. interactions, adverse effects, dose, precautions) can have positive inference on sound health of both the family and the children.[12,13]

This study shows that there is a difference in the prevalence of self medication for OTC (76.27%) & Prescription Only medications (51.30%).The comparison of frequency indicates that the relevant knowledge about rational drug therapy has enabled the students to practice responsible self medication to some degree. It has also been demonstrated in several studies before**,** that the students studying medicine and pharmacy start self medication with ease in a routine manner with minor elements of concern which can be an intricate scenario, however, the practice of self medication by medical students is more responsible owing to their knowledge about drugs thus leading to a cautious conduct of the practice with relative apprehension. .[14-16]

In a same manner many students reported the use of vitamins or supplements without any prescription as they claimed that the use of such medicine is entirely safe and upon discontinuation of these drugs they felt tired and exhausted. So 52% medical students and 57% pharmacy students reported the chronic use of these vitamin supplements by self medication, even though some of them were prescribed with these vitamins for a limited period of time, but due to the assumption that*" vitamins bear no side effects and they are wonder drugs*", they prolonged the use over period of months and years without further consultation with their physicians, although irrational use of vitamins have associated toxicities.[17] Self medication with vitamin and supplements is relatively larger somehow in individuals suffering from hypochondrias. The lack of awareness about the sensitivity of the medicines has shown to be an important cause of self medication of such drugs in 7% of the respondents.

The most common reason for self medication stated by the students is that "They know about the drug use by previous experience" is 67%. In most of these cases the students had a medical visit and were prescribed with a certain medicine but later on they had used that medicine after self diagnosis on their own accord. This finding may indicate that both the students studying medicine and pharmacy feel inclined towards the use of medicines once they gain knowledge of the relevant indications, and they try to rely on themselves for its use without major concern probably because they study about it and find about them in the text books of medicine and pharmacology. There is substance to believe that the most common cause of self medication in students of other disciplines (non-health sciences) may be at contrast.

The dispensing of many medicines labeled for Prescription Only e.g. antibiotics by local pharmacy, stores and dispensaries without a proper prescription is one of the root cause of self-medication for these drugs on such a large scale (17%). Proper education, public awareness and a more vigilant pharmaceutical care system is required for the effective control of this situation. There also have been studies on the availability of aspirin and acetaminophen as OTC advocating the change of status of these drugs to Prescription Only medicine because of the hazard imparted by self medication.[18] More controlled and careful dispensing of such medicines will reduce the potential of abuse and will make the health care system more effective.

Socioeconomic factors also promote the practice of self medication as depicted by the stated data (9%) by the students who find it convenient to self medicate rather than to bear medical expenses. There is a positive correlation with the economic status and the practice of self medication. Poor economic status leads to more frequent practice of self medication, Studies have shown that avoiding the cost, or perceived high cost, of visiting a doctor tends to favor self-medication .[19,20] Another study states "self-medication is an inferior good at high income levels and a normal good at low income levels, and it shows a strong and robust negative insurance effect."[21]The use of antibiotics without proper prescription and report to the doctor, may lead to masking of symptoms for underlying infections which may go undetected and get complicated. It is also reported that self medication can delay entry of the patient to the proper medical management system and drive the patient to employ a less effective step-care approach as opposed to evidence-based guidelines.[22]

The dependency of each group of student on the different causes of self-medication that may affect them the most was measured in significant value. The Significant value is 0.488, which shows that there is no dependency of medical and pharmacy students on main cause of self medication, because the significant value is greater than 0.05. In cross tabulation of the data, we have observed that the frequency of medical and pharmacy is very close. It means that most common reason for Self medication is somewhat similar in both the respondent type (medical or pharmacy).

CONCLUSION

A considerable numbers of students are involved in the practice of self medication without elementary concern. The dilemma of this fact is that most of the people are able to get symptomatic relief only by self medication and the seriousness of the actual disease progresses over time. The case reports for chronic use of some medications to extended periods without knowledge of the dire consequences indicates the lack of awareness. The design and application of an effective pharmaceutical care system can control both the enormity and gravity of the adverse effects of the practice and regulate it, designating its significance in the health care system as a whole.

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Original Article

Early Pregnancy Complications and Risk Factors

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ABSTRACT

Objective: To determine the underlying risk factors in early pregnancy complication and outcome.

Study design: Case series study.

Place and duration of Study: This study was conducted in the Department of Obstetrics & Gynaecology at Peoples Medical College Hospital Nawabshah from January 2010 to December 2010.

Materials and Methods: All the women with first trimester pregnancy with different complications were included in this study, while those women with uneventful first trimester were excluded. The included women were registered on pre-designed proforma studied variable including demographic details, gestational period, type of complication, risk factor treatment and outcome. The data was examined in terms of mean and percentage with a confidence interval of 95 %. Analysis was done on SPSS version 10.

Results: Out of 661 total early pregnancy admissions, 309 (46 – 74 %) patients had different early pregnancy of complication. Their mean age was 29.22 ± 6.22 years. Commonest complications found were abortion in 206 (66.66 %) cases. The underlying risk factors found in miscarriage were antiphospholipid syndrome in 8 (3.88 %) cases, diabetes mellitus in 35 (16.99 %) cases. Hypertension in 50 (24.27 %) cases, PCOS in 15 (7.28 %) cases and infection in 10 (4.85 %) cases.

60 (61.22 %) cases were treated by minor surgical procedures and 38 (38.77 %) cases treated with conservative medical therapy. Outcome were anaemia in 245 (79.28 %) cases, psychological upset in 189 (61.16 %), infection in 131 (42.39 %) and coagulopathy in 17 (5.50%) cases.

Conclusion: Miscarriage was found as the most frequent early pregnancy complication and the most frequent risk factor was hypertension. Outcome included anaemia, psychological upset and infection.

Key Words: Early pregnancy complications, risk factors, miscarriage, hypertension.

INTRODUCTION

Factors affecting pregnancy outcome are socioeconomic status, smoking status and other health related condition and behaviour[1]. Acute complications of pregnancy can appear in all trimesters, their diagnosis and management are great challenges[2]. In the first trimester pregnancy complicated by bleeding less than 50 % will progress normally beyond 20 weeks of gestation, 10 – 15 % will be ectopic pregnancy, 0.2 % will be hydatidiform mole and over 30 %will miscarriage[3]. Different types of early pregnancy complications are abortion, gestational trophoblastic disease, ectopic pregnancy and hyperemesis gravidarum. Abortion is the most common complication during the early pregnancy[4,5].

It is estimated that abortion complications are responsible for 14 % of the approximately 500,000 maternal deaths that each year, 99 % of these in the developing world. It is one of the major causes of maternal death in Pakistan contributing 11 % to the maternal mortality ratio[6].

Consequent maternal morbidity is high with immediate complications including blood loss, sepsis, damage to viscera and renal failure. Chronic illnesses subsequent to abortion are anemia, chronic pelvic pain, pelvic inflammatory disease, dysparenia, subfertility and ectopic pregnancy[7]. It has serious impact on the life of women as well as its consequences like depression and anxiety. The treatment either expectant management, vacuum aspiration, surgical emptying of uterus has its own complications[8]. Common risk factors are extreme of age, multiparity different medical problem like diabetes mellitus, hypertension, infection, genetic factors, polycystic ovarian syndrome, thyroid disorders, autoimmune disorders and antiphospholipid syndrome. Ectopic pregnancy is another frequent, problem that process a major health risk to women during child bearing years and accounts for about 9 % of all pregnancy related death in the United States[9].

Underlying risk factors are pelvic inflammatory disease and previous surgery. Other complications of early pregnancy include hyperemesis gravidarum and genital trophoblastic disease. Failure to make accurate diagnosis may cause unnecessary pain and distress and may compromise women's reproductive failure. This problem is particularly more distressing if the condition is recurring. As the diagnostic test is early pregnancy are improving, it is pertinent to focus more alteration to provision of advanced care and support at this important time in pregnancy[10]. Identifications of risk factors in early pregnancy complications are of great

help in treatment of underlying pathology prior to future conception.

The objective of this study was to find out influence of various risk factors on early pregnancy complications and treatment outcome.

MATERIALS AND METHODS

This study was carried out in the Department of Obstetrics and Gynaecology at Peoples Medical College Hospital Nawabshah from January 2010 to December 2010. During the study period, all the admitted women with early pregnancy complications were included in the study while those with an uneventful first trimester were excluded from the study. After taking detailed history, through clinical examination was done. All women were investigated for different risk factors like anticoagulant antibodies, antiphospholipid antibodies for antiphospholipid syndrome (APS), blood sugar level for screening of diabetes mellitus, serum thyrotrophin stimulating hormone (TSH), luteinizing hormone (LH) ratio and serum fasting insulin level for polycystic ovary syndrome (PCOS).

Blood complete picture, mild stream line analysis and high vaginal swab for infection. The treatment options adopted after counseling were medical that is conservative medical therapy for treatment of underlying risk factors like hypertension and diabetes, supportive therapy and hormonal supplements such as progesterone in case of PCOS and threatened abortion. Those women who had missed abortion or incomplete abortion were treated by misoprostol or minor surgical procedure dilation and evacuation (D&E), while women with gestational trophoblastic disease (GTD) were treated by suction and curettage. Major surgical procedure laparotomy was performed in case of septic abortion and ectopic pregnancy.

The case records of these women were maintained on the predesigned proforma having demographic details, gestational period, type of complication, underlying risk factors, treatment modalities outcomes and follow up. Data was analyzed on SPSS version 10 other variables were calculated frequencies and percentages.

RESULTS

Total 309 patients were enrolled in this study. Patients' demographic characteristics and frequency of early pregnancy complication with risk factors are summarized in table I to IV respectively. Mean age of early pregnancy complication was 29.226 ± 6.22 years. Majority of cases were aged 31 years and above (n = 141, 45.6 %) and between 21 and 30 years (n = 120, 38.8 %) (Table-I & II). Early pregnancy complications commonly occurred in nuliparous women i.e. 143 (46.31 %) cases, parity was above 3 while 53 (17.2 %) cases were primipara (Table-III). Frequency of early pregnancy complication was high upto 8 weeks gestational i.e. 187 (60.5 %) cases (Table-IV). Presenting symptoms were bleeding per vaginum in 273 (88.35 %) cases. Pain in lower abdomen pain in 249 (79.61 %) cases. Vomiting in 50 (16.18 %) cases and shock in 35 (11.32 %) (Table-V). Abortion was the frequent complications of early pregnancy found in 206 (66.66 %) cases underlying risk factors found in abortion were antiphospholipid syndrome in 8 (3.88 %) cases, diabetes mellitus in 35 (16.99 %), hypertension in 15 (7.28 %) cases and infection in 10 (4.85 %) cases. Other complications were hyperemesis gravidarum were in 50 (16.18 %) cases, gestational trophoblastic disease in 33 (10.67 %) cases and ectopic pregnancy 89 (45 %) cases were associated with infection, while 3 (15 %) cases had previous surgery.

Table No.I: Age Scale (n = 309)

Age	Frequency	Percentage	Cumulative %
20 Years	48	15.5 %	
21 – 30 Years	120	38.8 %	
> 31 Years	141	45.6 %	

Table No.2: Statistics (n = 309)

Age	Age	Gestational Age	Parity
Mean	29.2265	9.0874	5.1748
Median	30.00	8.00	3.000
Mode	35.00	8.00	2.00
Standard Deviation	6.22055	1.53386	3.954

Table No.3: Parity (n = 309)

Parity	Frequency	Percentage
Primi	53	17.2 %
1 – 3	113	36.6 %
> 3	143	46.3 %

Table No.4: Gestational Age (n = 309)

Age	Frequency	Percentage
≤ 8 weeks	187	60.5 %
9 – 13 weeks	122	39.5 %

Table No.5: Symptomatology (n = 309)

Symptomatology	No of Cases	Percentage
Bleeding	273	88.35 %
Pain	249	79.61 %
Gestational Age • 8 weeks • 9 – 12 weeks	 170 139	 55.01 % 44.98 %
Vomiting	50	16.18 %
Shock	35	11.32 %

Table No.6: Type of Early Pregnancy Complications with Underlying Risk Factors (n = 309)

Complication	Frequency of Risk Factors							
	Undetected	Antiphos-pholipid Syndrome	Diabetes Mellitus	Hypertension	Polycystic Ovarian Syndrome	Infection	Previous Surgery	Total
Abortion	88 (42.71 %)	08 (3.88 %)	35 (16.99%)	50 (24.27 %)	15 (7.28 %)	10 (4.85 %)	-	206 (66.66 %)
Gestational Trophoblastic Disease	28 (84.84 %)	-	-	05 (15.15 %)	-	-	-	33 (10.67 %)
Ectopic Pregnancy	08 (40 %)	-	-	-	-	09 (45 %)	03 (15 %)	20 (6.47 %)
Hyperemesis Gravidarum	45 (90 %)	-	05 (10 %)	-	-	-	-	50 (16.18 %)

DISCUSSION

The loss of wanted pregnancy is always distressing to the couple and the associated psychological morbidity can cause mental, physical and sometimes social deterioration. Women with severe complications like ruptured ectopic pregnancy and hemorrhage in a molar pregnancy may end up in grave ill health, compromised obstetric future and even death. This is a highly traumatic emotional event in any woman's reproductive career and greatly underestimated by the medical practitioners. Amongst the cases of early pregnancy bleeding, the prevalence of miscarriage was found to be 10.8%. This is comparable to the study from Liaquat Medical College Hyderabad, where the corresponding figure was 11.4%[11]. Regan found the risk of miscarriage before 20th week to be 12 %[12]. However, Saad reported the incidence to be around 45 – 55 %[13]. In a study 88.35 % cases were with bleeding. This difference may be due to the difference in the number of patients reporting to the respective hospital. They got the age also influenced the frequency of early pregnancy bleeding. The first trimester bleeding was more common than the second trimester bleeding. 81.7 % women with first trimester pregnancy had vaginal bleeding as compared to 18.2 % of the second trimester patients[14].

Early pregnancy complications are most commonly encountered during first trimester are miscarriage being the commonest one 66.66 % (206 patients). This study shows mean age for miscarriage was 29.22 years, according to the surveillance report[15]. The frequency of risk factors in abortion was higher, found in 57.74 % (118 cases), Jaleel reported 57.95 % cases[16].

The ideal time for correction of underlying risk factor is before conception and there women should be properly followed. Infection was found in 4.85 % (10 cases) in comparison which Wamwana EB et al where inflammatory disease was a common risk factor for abortion 43 % cases. This vast difference could be due to social and cultural attitude[17].

Polycystic ovarian syndrome was another high risk factor found in abortion 15 (7.28 %) while 12.5 % was reported by Cocksedge KA et al[18]. Pregnancy failure in case of polycystic ovarian syndrome is because of excessive androgen or obesity. Antiphospholipid syndrome was found less significant risk factor in cases of abortion 8 (3.88 %). This is contrast with Cervera et al study where antiphospholipid syndrome was highly associated with early pregnancy loss[19]. This need further work up in our part of world to find actual prevalence of antiphospholipid syndrome and its complications. The incidence in this regard are cost of investigations, poor literacy and lack of awareness in patients.

In this study, most of the women who came with threatened abortion were successfully located by conservative management like treatment of underlying medical problem and progesterone supplement. The role of progesterone in preparing the centers for implantation of the embryo and its role in maintaining the pregnancy has been common for long time[20]. Those women who had incomplete abortion or missed abortion underwent mostly surgical evacuation i.e. 60 (61.22 %) as same is reported by Petrou S et al[21]. Nanda K et al[22]. Evacuation with vacuum aspiration is a safe alternative[23]. In this study, 38 (38.77 %) cases had medical abortion. Vaginal misoprostol is found to be an effective treatment in cases of early pregnancy failure and has been safe option on reported by Zhang J et al[24] and Sotiriadis A, et al[23].

In this study, ectopic pregnancy accounted for 20 (6.47 %), pelvic inflammatory disease was found in 9 (45 %) cases of ectopic pregnancy, which is consistent with the study by Menons et al[25]. Hyperemesis gravidarum is a frequent pathology and can be the cause of serious neurological complications[17]. The present study also showed a high frequency of hyperemesis gravidarum but in majority of cases no underlying risk factor was found 90 % cases. Early vitamin supplementation is helpful in pregnancy related hypermesis[26]. The different outcome measures found were the psychological upset in 52.3 %, but all those patients had mild depression. For that they were well counseled and reassured. No major psychological or other problem was found. While, the anaemia in 80.3 % and coagulopathy 17 (5.50 %) were due to blood loss as well as infection and were managed accordingly.

Infection rate was found very high i.e. 131 (42.39 %), same is reported by Nanda et al and Sturchler D et al study where the infection rate was high following surgical emptying of uterus[27,28]. The reason could be

due to late referral to tertiary hospital after manipulation in this study.

CONCLUSION

More pregnancies are lost in the early weeks than at any other stages of gestation. Main categories of early pregnancy are abortion, ectopic pregnancy as well as molar pregnancy. Abortion was found to be the most frequent early pregnancy complication with many risk factors commonest having hypertension. Outcome was anaemia, psychological upsets and infection. Early diagnosis of risk factor and their prompt treatment is likely to improve the outcome.

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Original Article

Complications of Open Transvesical Prostatectomy vs. TURP : A Comparative Study

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ABSTRACT

Objective: To assess the outcome, complications and frequency of re-operation of BPH in Transvesical Prostatectomy and TURP, a ten years single centre study.

Study Design: A retrospective comparative study.

Place and Duration of Study: This Study was conducted at the Department of Surgery and Allied, SOM Fauji Foundation Hospital, Karachi, Pakistan from January 2001 to May 2010.

Materials and Methods: All cases which underwent Open Transvesical Prostatectomy or TURP from January 2001 to May 2010 were reviewed. Total of 360 cases were included, out of which 250 were done by open method and 110 by TURP. Outcome, complications and frequency of re-operation of both the techniques were noted. Data entered into SPSS v.15 and analyzed statistically.

Results: Age ranged from 48 to 77 years with a mean age of 57 $\pm$ 6 years. Hospital stay and catheter removal times were longer in open surgery. Symptom score improvement of 6 points noted in TURP group while 10 points in open surgery group. Four point five percent cases of TURP while 2.8% cases of open surgery needed transfusion. TUR Syndrome was seen in 1.8% of TURP, while no case of open surgery. Stricture urethra developed in 3.6% cases of TURP, while in 0.4% case of open surgery. Urinary Incontinence was seen in 2.7% cases of TURP while nil in open surgery. Re-operation to relieve obstruction needed in 11.8% cases of TURP, while only 1.2% cases of open surgery needed re-operation.

Conclusions: There is no statistically significant difference in complications between TURP and open surgery methods, whereas outcome of operation in terms of symptom score improvement was better in open surgery group and no need of re-operation. Disadvantages of open surgery include longer hospital stay and catheter removal time and a scar.

Key Words: BPH, TURP, Prostatectomy, Complications of Prostatectomy.

INTRODUCTION

Benign Prostatic hyperplasia (BPH) is the most common cause of bladder outlet obstruction and voiding symptoms in middle aged and elderly men[1]. The treatment options for bladder outlet obstruction caused by benign prostatic hyperplasia (BPH) have been expanded dramatically over the past two decades with the development of medical and minimally invasive therapies[2]. But surgery is still the gold standard. Surgery can be transuretheral (TURP) or open. Open surgery can be transvesical (Freyers[3]), retropubic (Millin's[4]) or perineal prostatectomy (Young[5]). Perineal prostatectomy has now been abandoned.

TURP nowadays is the most commonly performed surgery for obstructing prostates. Open transvesical prostatectomy is still used for large prostates protruding into bladder of median lobe, associated vesical calculus, clinically significant bladder diverticulum and in obese patients[6]. Open treatment has advantages over TURP of lower re-treatment rate more complete removal of prostatic adenoma under direct vision, no risk of TURP syndrome which occurs in 2% of patients undergoing TURP[7]. Several other series have demonstrated more significant objective improvement in urinary symptoms following open Freyer's prostatectomy[8,9,10]. Disadvantage over TURP is scar, comparatively longer stay in hospital, and more chance of per operative hemorrhage[11].

TURP is done through urethra by excising peiuretheral and transitional part of gland with electric loop. Resectoscope is passed through urethra and loop connected to electric current by diathermy and periurethral and transitional parts of gland are excised. TURP is ideal operation for small prostates where patients stay in hospital is not more than two days. Early mobilization and early return to work are the advantages.

In this study we have compared the outcome and complications of open transvesical operation and TURP.

MATERIALS AND METHODS

This is a retrospective comparative study. All the 360 consecutive case which underwent prostatectomies either by open transvesical method or by TURP were included in the study. Prostates of more than 70 g were done by open method while smaller prostates were operated by TURP. Age ranged from 48 -77 years with a mean age of 60 $\pm$ 7 years. Out of 360 cases 250 were operated by open method and 110 by TURP. The case

documents of all the cases which were included in the study were reviewed thoroughly. History, physical examination, investigations, pre-operative assessment notes, operative notes, post-operative notes and follow up of all the cases were reviewed. Outcome of the operations and complications, if any, were noted and results compiled

Exclusion criteria:

Old aged patients unfit for Surgery.
Patients with high PSA with suspicion of Carcinoma of Prostate.
Patients under 30 years of age.
Patients with prostate of less than 40 grams.
Patients with proven Prostate malignancy.

Transvesical prostatectomy was done through pfinsteal incision. Bladder was opened and care taken to make prostate relatively avascular by ligating the lateral pedicles of prostate. While enucleating prostate, only anterior commissure broken and plane developed between prostate lateral lobe and median lobes. Each lobe is pulled by Ellis forceps and adenoma separated by blunt and sharp dissection. Apex is incised under direct vision, very near to prostate using a curved mayo's scissors to save external sphincter and leaving bladder neck intact reducing the chance of post-op incontinence. Golden test whether bladder neck needs to be incised or not, depends upon passing the urethral catheter. If catheter went in to bladder without obstruction at bladder neck, no need to incise the neck reducing the chances of incontinence. While TURP was done keeping away from verrumontanum and removing the lateral lobes till capsule of the prostate is visible.

RESULTS

A total of 360 patients underwent prostatectomies from January 2001 to May 2010. Two hundred and fifty patients were operated by open method and 110 by TURP method. Average time for surgery was 57± 4 minutes (Range between 45 to 70 minutes). Age ranged between 40 to 77 years (Mean age was 60 ± 7 years). Complications of both groups of surgeries were noted. Total no of complications was 57 (15.8%). Total cases of TURP method were 110 and complications noted in this group were 36 (32.7%), while total case in open method were 250 and complications noted were 25 (10%). Complications were divided into immediate (within 24 hours), early (with 7 days) and late (after 7 days). Complications of both the groups are shown in table 1. Variables noted are shown in Table 2.

Table No.1: Complications

Complications		**TURP**	**Open Prostatectomy**
Immediate	Bleeding needing transfusion	5 (4.5%)	07 (2.8%)
	Clot retention needing evacuation or fast irrigation	Nil	01 (0.4%)
	Perforation of bladder	01 (0.9%)	Nil
	TURP Syndrome	02 (1.8%)	Nil
	Anesthesia related complications	Nil	Nil
Early	Wound infection	Nil	02 (0.8%)
	Voiding dysfunction	03 (2.7%)	Nil
	U.T.I.	02 (1.8%)	05 (2%)
	Urinary incontinence (Temporary)	03 (2.7%)	Nil
Late	Retention of Urine	06 (5.4%) (Needed Re-TURP)	Nil
	Permanent Incontinence	Nil	Nil
	Retrograde ejaculation	10 (9%)	05 (2%)
	Urethral Stricture	04 (3.6%)	01 (0.4%)
	Incisional Hernia	Nil	04 (1.6%)

Table No.2. Variables

Variables	**TURP**	**Open Prostatectomy**
Average Hospital stay	02 days	04 days
Average Catheter removal time	02 days	04 days
Average Duration of surgery	40 to 60 min	40 to 60 min
Average Improvement in flow rate	15 ml per sec	17-20 ml per sec
Average Residual urine on post op u/sound	Less than 50 ml	Less than 20 ml
Average Decrease in night frequency after 6 weeks	Twice a night	Once a night
Erectile dysfunction	05 (4.5%)	10 (4%)
Average Symptom score improvement on existing score	6 points	10 points

DISCUSSION

Enlarged prostates producing urinary problems are the main cause of morbidity in middle aged and elderly people. Treatment of enlarged prostate has changed dramatically over the last two decade from medical to minimally invasive (laser and thermal evaporation). But time tested procedures i.e. surgery including TURP and

open prostatectomy are still very successful. Transvesical open prostatectomy was popularized by Irish surgeon from Galway Mr Peter Freyer. He described the procedure in 1900 and then published his series of 1000 cases in 1912[3]. Major advantages of this approach are direct access to bladder neck and prostate, removal of adenoma under direct vision and controlling bleeding. Another Irish surgeon Terrence Millin popularized the other approach of open prostatectomy popularly known as Millin or retro-pubic prostatectomy. He described retro-pubic prostatectomy and published his series of 25 cases in LANCET in 1945[4]. Advantages of Millin's over Freyer's approach are that no need to open bladder, dorsal venous complex is controlled first and then apical adenoma is removed under direct vision so chances of incontinence are less. But its disadvantages are that intra-vesical protruding median lobe, vesical calculus and clinically significant diverticulum cannot be dealt with.Other open prostatectomy method i.e perineal prostatectomy has been abandoned now.

Trans-urethral resection of prostate (TURP) was started in USA in1920. But it really picked up in 1976 when fibreoptic light system and Hopkin's rod telescopes with wide angle were developed which improved the visibility. It resulted in most of the cases being done by TURP. Nowadays more than 90% of prostatectomies are done by TURP method. Formal care guide lines developed for BPH may have positive effect on the outcome of surgery[12]. Studies on urinary peak flow rates and invasive pressure flow have demonstrated the superiority of TURP over minimally invasive therapies.[13] Complications of TURP include: Failure to void, haemorrhage requiring transfusion, clot retention, infection, bladder neck contracture, urethral stricture, transurethral resection syndrome and rarely incontinence.

Suprapubic prostatectomy or transvesical prostatectomy consists of the enucleation of the hyperplastic prostatic adenoma through an extraperitoneal incision of the lower anterior bladder wall. In retropubic prostatectomy, the enucleation of the hyperplastic prostatic adenoma is achieved through a direct incision of the anterior prostatic capsule. The advantages of this procedure over the suprapubic approach are (1) excellent anatomic exposure of the prostate, (2) direct visualization of the prostatic adenoma during enucleation to ensure complete removal, (3) precise transection of the urethra distally to preserve urinary continence (4) clear and immediate visualization of the prostatic fossa after enucleation to control bleeding, and (5) minimal to no surgical trauma to the urinary bladder. The disadvantage of the retropubic approach, compared with the suprapubic prostatectomy, is that direct access to the bladder is not achieved. This may be important when one considers excising a concomitant bladder diverticulum or removing bladder calculi.

The disadvantage of suprapubic compared with the retropubic approach is that direct visualization of the apical prostatic adenoma is reduced. As a result, the apical enucleation is less precise, and this factor may affect postoperative urinary continence. Furthermore, hemostasis may be more difficult because of inadequate visualization of the entire prostatic fossa after enucleation.

In the Sicilian-Calabrian Society of Urology's retrospective studies of 1997 and 1998 open prostatectomy accounted for 32% of all surgical treatments.[14] Open prostatectomy is a satisfactory alternative treatment for BPH in situations where TURP facilities are not available because it does not require any special equipment and expensive disposables[15] or where TURP was not possible because of technical reasons. In TURP there is a risk of reoperation in 15% of patients after 8-10 years[16]. We had to re-operate 7 cases in TURP group and none in open transvesical group. Harvard and Nanninga & Oconnor used suprapubic catheter and closed the bladder[17]. We used no suprapubic catheters and only 24 FG 3-way hematuria catheter was used with excellent results. Five patients in TURP group and 7 cases in transvesical group needed blood transfusion. Gerald et al has reported 6ml per gram blood loss in TURP cases and 5ml per gram in open cases[18]. In our series 3.6% patients developed strictures in TURP group and 0.4% in open group. Howe et al reported less than 2% stricture, bladder neck contracture in 2.6% in TURP and 5.3% in open prostatectomy. Open prostatectomy certainly improves symptoms upto 10 points above the existing score on AUA Symptom Score Index[19]. Incidence of retrograde ejaculations after open prostatectomy has been reported as 6.5%[16] while in our series retrograde ejaculation occurred in 2% cases of open prostatectomy and 9% cases of TURP as special attention was given not to destroy bladder neck unless cause of obstruction was median lobe or bladder neck contracture. Erectile dysfunction occurred in 4.5% cases in TURP group and 4% in open prostatectomy. Roethborn has reported sexual dysfunction in 13.5% of cases operated by TURP but research studies show that these peoples are old and could have sexual dysfunction before surgery[20] and there is increase in dysfunction as they further grow in age after prostate surgery. Wound infection was seen in 0.8% cases of open prostatectomy due to strict aseptic measures while Campbell has mentioned 5% incidence of wound infection[21] and AUA guideline on the management of BPH[19] has mentioned 3-7% infection in open prostatectomy. In our series 1.6% patients developed incisional hernia while Fuller et al[22] has reported 4.6% incidence of incisional hernia in a series of 250 cases of open radical robot – assisted prostatectomies. However data of open

prostatectomy for BPH could not be found in national or international data.

CONCLUSION

This study proves that open Transvesical prostectomy is still very useful procedure with minimal complications and excellent result. It is still more superior to TURP in regards 1) less chance of reoperation 2)less urethral stricture 3) more improvement in symptoms score 4) less pop residual urine 5)greater flow rate per seconds. Although hospital stay was slightly longer than TURP, but considering all other advantages this procedure should be practiced more and should be taught to residents properly.

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Original Article

Experience of Malaria at Tertiary Care Hospitals Sukkur

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ABSTRACT

Objective: To determine Plasmodium species, clinical features, and hematological changes in Malaria.
Study Design: Prospective Descriptive Study.
Place and Duration of Study: This study was carried out at the Paediatric Departments of Shaheed Mohtrama Benazir Bhutto Medical University at Ghulam Muhammad Mahar Medical college Hospital Sukkur and Chandka Medical Collage Larkana, from July 2007 to July 2011.
Patients and Methods:, This is prospective descriptive study, including 250 patients with fever and malaria confirmed on microscopy and immunochromatography, at both departments were included. After consent a separate pro- forma was filled for each patient to record demography and data about clinical presentation and laboratory investigations.
Results: Out of 250 malaria cases, the classical clinical presentation was found in 198 (79.2%) of patients while 52 (20.8%) had other symptoms. Males were in majority 164 (65.6%) and age range 1 year to 12 years. Splenomegaly was found in 135 (54%) and hepatomegaly in 86 (34.4%) of patients. Microscopy results of malaria patients revealed P. Falciparum in 97 (38.8%), P. Vivax 91 (36.4%) and 62 (24.8%) mixed infection of P. Falciparum and P. Vivax. Anemia was found in most of patients 84% (Hb < 10g/dl). Thrombocytopenia (platelets < 150,000/cmm) was found in 50 (20%) of patients.
Conclusion: The classical presentation of Malaria was seen in majority of cases but one should be careful about atypical or very serious complicated clinical presentation of malaria, and early diagnosis of P. falciparum or mixed infection is very essential to save the life of young children.
Key Words: Plasmodium species, anemia, hepatosplenomegaly, thrombocytopenia.

INTRODUCTION

Malaria is one of the global public health problems and imposes a major burden on health in under developed countries of world. Each year, malaria results in approximately 300-500 million clinical cases and as many as one million deaths[1].Pakistan is among moderately endemic countries for malaria, with the majority of cases caused by Plasmodium vivax, although recently there has been an alarming shift to infection caused by plasmodium Falciparum especially in the southern Punjab, Balochistan and Sindh provinces [2,3,4].There are variation in prevalence of malaria from province to province and area to area. The province Balochistan, which constitute 5% of population of the country but contributes over 30% of the reported malaria case, while the Punjab province with 52% of population reports less than 10% of malaria cases and from Sindh about 30% cases of malaria with 25% of national population. [5]

In Pakistan, there are 1.6 million malaria cases and 50,000 deaths each year[6] Malaria also considerably affects the health of children especially malnourished, leaving sequelae, increasing susceptibility to other infections and hampering their development. Pregnant women are also vulnerable to malaria, being an important cause of stillbirth, infant mortality and low birth weight. Untreated or treated too late plasmodium Falciparum malaria specially caused by drug resistant strains may lead to dangerous complications such as cerebral malaria and severe anemic cardiac failure, renal failure, black water fever, thrombocytopenia, DIC, pulmonary edema and death .Mortality is very high (10-30%) in complicated P. falciparum infection [1]

The emergence of drug resistance in plasmodium falciparum has significantly undermined malaria control programs in countries like us were malaria is endemic [7] and poor population, lack of facilities to investigate early each patient for the plasmodium malaria. Hematologic changes are the most common complications encountered in malaria and play a major role in fatality[7]. We looked on the clinical features of Plasmodium species and hematological changes in patients with malaria in our rural tertiary care setting in Larkana and Sukkur Sindh.

PATIENTS AND METHODS

This is a prospective descriptive study including 250 patients with fever and malaria infection confirmed on microscopy and immunochromatography at Paediatric departments of Shaheed Mohtrama Benazir Bhutto Medical University Sukkur and Larkana, from July 2010 to July 2011.

Inclusion criteria: All patients having fever and malaria infection, and age ranging from 1 year to 12 year of either sex.

Exclusion criteria: patients having other infections like pneumonia, enteric fever, pulmonary tuberculosis, meningitis, congenital problems, like heart, renal, bleeding disorders, and thalassemia.

After taking consent a separate pro-forma was filled for each patient to record detailed medical history and physical examination and base line investigation including complete blood count, peripheral smear .The species of Plasmodium was diagnosed on microscopy of 10% Geimsa stained thick and thin blood film, and by immunochromatography (ICT), blood culture, L .F.T, S creatinine and urea, X-ray chest, and echocardiography as needed in some cases.

The data was analyzed using SPSS version 13.

RESULTS

Out of 250 malaria cases males were 164 (65.6%) and 86(34.4%) females and age ranges from 1year to 12 years as shown below in table 1

The majority of patients presented with classic malaria symptoms in the form of high grade fever, rigors, sweats, headache, nausea, vomiting, diarrhea and pallor 198 (79..2%), while 52 (20.8%) cases presented with other symptoms like jaundice, severe pallor, cyanosis, skin bleeding, drowsiness, unconscious, seizures, splenomegaly, hepatomegaly, anemic cardiac failures, edema, respiratory distress and shock.table2. Clinical examination of the study patients showed that splenic enlargement was in 135 (54%) cases and hepatomegaly was seen in 86 (34.4%) patients.

There was significant difference in the occurrence of hepatosplenomegaly in patients with mixed plasmodium infection of malaria and in P. vivax malaria patients. Seizures followed by un-arousable coma for more than six hours was found in 25 (10%) of cases in our series, more in mixed malaria case 16% and 12% in plasmodium falciparum patients as shown in table 2. In patients with falciparum malaria one had developed acute respiratory distress syndrome and shock.

Blood film examination results for malaria species revealed P. Falciparum 97 (38.8%), P. Vivax 91 (36.4%) and 62 (24.8%) both species (mixed infection) were shown in table 3. None of the case with P. Ovale or P .malariae was detected. All patients had active malaria as evidenced by the presence of schizont and ring stages. The complete blood counts shows hemoglobin ranged from 3 gram/dl to 12 gram /dl, mean Hb level (8.39644+ 2.141464) and with significantly low in cases of falciparum malaria (8. 2588+2.2742) g/dl and (7.4983+ 2.0226) g/dl mixed malaria cases as shown in table 4. Anemia (Hb <10g/dl) was present in most of cases 210 (84%) of patients. Thirty five (14%) patients had severe anemia and required blood transfusion in ward. Anemic cardiac failure was found in 10 (4%) patients. Packed cell volume was low in cases with falciparum and mixed malaria patients. Total white blood cell counts mean was (7351.851+5697.637), there was no significant difference in the different species. Normal platelets were found (>150,000/cmm) in majority of patients 200 (80%), the mean value of platelets was (212873.2+ 112735.6) and thrombocytopenia was found in 50 (20%) of patients. In falciparum malaria, 25 (25.5%) patients had thrombocytopenia, vivax malaria 5 (5.5%) of patients and in mixed malaria 20 (32.2%) patients had thrombocytopenia, but 10 out of 50 thrombocytopenic patients had skin bleeding manifestation.

Table No.1: Age group of 250 patients

Age in years	No; of patients	Percentage
1-4 years	85	34.0%
5-8 years	73	29.2%
9-12 years	92	36.8%

Table No.2: shows clinical presentation of Plasmodium species.

	Falciparum malaria no 97 (38.8%)	Vivax malaria no 91 (36.4%)	Mixed malaria no 62 (24.8%)	Total no 250 (100%)
Symptoms				
Classic	70(72.2%)	85 (93.4%)	43 (69%)	198(79.2%)
Other	27 (27.8%)	6(6.6%)	19(31%)	52(20.8%)
Spleno-megaly	50(51%)	45(50%)	40(64.5%)	135(54%)
Hepato-megaly	30(30.6%)	25 (27.7%)	31(50%)	86(34.4%)
Uncons-cious/CM	12(12.3%)	3(3.3%)	10(16.0%)	25(10.0%)

Table No. 3: Shows species of plasmodium

Species of plasmodium	Number of patients	Percentage
Falciparum	97	38.8%
Vivax	91	36.4%
Mixed falciparum + vivax)	62	24.8%

DISCUSSION

The clinical symptoms of malaria were described by Hippocrates (500BC) more than 2000 years before the parasite described[8]. Malaria has been and still is the cause of much human morbidity and mortality. Forty percent of the world's population lives in endemic areas[7]. The infection rate for the world population is 250 million per year and the mortality rate is 1-2 million per year[9].Most of deaths among these are infants, young children and pregnant women so much so that a child is dying of malaria every 30 seconds[10] Malaria is a world wide problem with transmission occurring in over 100 countries with a combined population of over 1.6 billion people[1].

Table No.4: Shows hematological changes in relation to Plasmodium species

	Falciparum Malaria no;97, Mean± SD	Vivax Malaria No. 91 Mean ± SD	Mixed malaria No. 62, Mean± SD	Total No. 250 Mean± SD
Hb g/dl	8.258±2.274	9.154±1.799	7.498±2.022	8.396±2.141
MCV/fl	70.711±9.859	70.516±10.446	71.696±7.624	70.884±9.559
TWBC	7034.433+2351.95	8143.637±8871.834	6677.419±2365.144	7351.851±5697.637
Platelets/cmm	202103.1±107755.9	252926.4±105245.5	170935.5±113567.5	212873.2±112735.6

The principal areas of transmission are Africa, Asia, and South America. Today, the most important problem in the management of malaria is the drug resistance of Plasmodium falciparum to various antimalarial drugs and occurrence of systemic complications[7] Most of the systemic complications from malaria results from hyperparasitemia. Hematologic changes are the most common complications encountered in malaria and play a major role in the fatality.

Early detection of the atypical features and hematological changes enables the physician to establish an effective and early therapeutic intervention in order to prevent the occurrence of major complications and deaths. In present study of 250 malaria patients, the classical clinical presentation was the most common in 198 (79.2%) while 52 (20.8%) cases had atypical or complicated clinical presentation .These results are comparable to the previously reported by local and international studies [11, 13]. The splenomegaly and hepatomegaly were seen more in cases of P. falciparum and mixed malaria cases than those infected with P .Vivax similar to the local study from Karachi[13] and internationally reported results [14] Cerebral malaria was found in 25 (10%) of our cases more in mixed malaria cases16% and 12% in P. Falciparum patients significantly lower than the locally reported 29%[13] and 25 (41%) [16]. Plasmodium species found in our study 97 (38.8%) P. Falciparum, 91 (36.4%) P. Vivax, and 62 (24.8%) mixed malaria infection with P. Falciparum and P. Vivax, similar to the reported by Taha K et al[14], lower than the reported by Yasinzai MI and Kakarsulemankhal JK [17] but the mixed infection was higher than the locally reported by Jammal MM et [11,13, 15]. Anemia was present in most of patients 84% in our series similar to the Iqbal S et al 70%[18] and severe was found in 14% of our cases while severe anemia was reported in 20 % of cases by Memon S et al[16]. Thrombocytopenia was seen in 50 (20%) of cases in our study, while it was 66%, 67% and 70% reported by Zahur et al, Jamal MM et al and Nadeem M [19,11,20].

CONCLUSION

The classical presentation of malaria was seen in majority of cases but one should be careful about atypical or (anemic cardiac failure, cerebral malaria) very serious complicated clinical presentation of malaria and early diagnosis of P. falciparum or mixed infection is very essential to save the life of young children.

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Original Article

Prevalence of Pharyngitis and Tonsilitis among Children

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ABSTRACT

Objective: Tonsillitis and pharyngitis are very common medical problems especially among the children. Tonsillitis affects mostly children between the age of 3-5 years because this is when their tonsils are in their most active stage, fighting infectious. When the child grown older, the tonsils will shrink and infection will become less common. Tonsillopharyngitis is one of the most common infections worldwide especially in children and young adults. Viruses are often involved in children younger than 5 years of age and a bacterial etiology is more usual after this age.

Study Design: Cross Sectional Study.

Place and Duration of Study: This Study was conducted at the Department of Microbiology, Basic Medical Sciences Institute, Jinnah Postgraduate Medical Centre, Karachi from Dec. 2008 to June 2009.

Materials and Methods: A total of 300 subjects (250 suspected children and 50 healthy children as control) of age ≤5-15 years, were included and this age group was again divided into three groups: ≤5-8 years, 9-12 years and 13-15 years respectively.

The throat swab was taken in duplicate, for that the care was done, not to touch the tongue of sides of the mouth cavity, the swab was taken from the posterior pharyngeal wall. The first swab was for the performance of Rapid Strep Test according to the principle and procedure mentioned and the 2nd swab for the culture and further processing in the microbiological laboratory.

Result: The percentage of isolated cases positive for GABHS. Out of 250 suspected cases 24 (9.6%) were positive for GABHS while 226 (90.4%) were negative for GABHS. The age wise distribution of the infection among ≥5-8 years, it was 13 (13.7%), among the age of 9-12 years it was 6 (6.2%) and among the age group of 13-15 years it was 5 (8.6%). Distribution of tonsillitis and pharyngitis among 166 male children, 4 (2.4%) were positive for tonsillitis, while 11 (6.6%) were positive for pharyngitis, while in female children, which 84 in total, 3 (3.6%) were positive for tonsillitis and 6 (7.1%) were positive for pharyngitis.

Conclusion: Group A beta hemolytic Streptococcal infection of throat constitute one of the major public health problems due to its post infectious complications. The data obtained provides information about the commonly prevalent bacteriological agent in pharyngitis and tonsillitis. Furthermore, it helps to outline the strategy towards appropriate therapy. It has also been concluded from this study that pharyngitis is more prevalenct than tonsillitis.

Key Words: Pharyngitis and tonsillitis, Streptococcus pyogenes.

INTRODUCTION

Pharyngitis and tonsillitis are inflammations in the throat that are caused by infection. If the tonsils get affected first, will be called tonsillitis, if the pharynx is primarily affected, it is called pharyngitis, these infections are spread by close contact with other individuals. These types of infections are more common during the late winter and early spring seasons, while viral infections are more common during summer and fall[1].

Pharyngitis and tonsillitis are acute inflammations involving the posterior pharynx and the tonsillar pillars. The most common bacterial cause of pharyngitis and tonsillitis is Group A beta hemolytic streptococci[2]. Tonsillitis is the term for an infection of the tonsils. Pharyngitis is an infection of the surrounding throat (called the pharynx). These two infections often occur at the same time[3]. Although children infected with GABHS will recover clinically, without antibiotics, treatment is recommended in order to prevent acute rheumatic fever and probably suppurative complications[4].

Group A streptococcal pharyngitis is more common during winter and rainy seasons and occurs frequently in school age children. Physical examination reveals an erythmatous pharynx, exudative tonsillitis, and tender cervical adenopathy. Palatal petechiae may be present and papillae of the tongue may be prominent and erythmatous, giving the appearance of a “Straw berry tongue”. Occasionally, a fine red rash is present, with a sand paper like feel. Other features are circumoval paller and erythematous accentuation in the body increases, called pastia’s lines[5].

The bacteria are present in the nose and throat, so normal activities such as sneezing, coughing and shaking hands can spread the infection to other people[6]. The infection could also be gained by touching objects such as books, tables, other hard surfaces that were handled by an infected person[6]. Most cases of sore throat are caused by viruses and are not strep throat. Viral sore throat does not need treatment. Symptoms of

viral sore throat include a running nose, cough, hoarseness, red or running eyes and diarrhea. Viral sore throat improves on its own without any treatment[6].

Acute tonsillitis can be caused by both viruses and bacteria. Generally, younger pre-school children tend to get viral tonsillitis and other children and adults get bacterial infections[7].

The tonsils are lymph nodes in the back of the mouth and top of the throat. They normally help to filter out bacteria and other micro-organisms to prevent infection in the body. They may become so over whelmed by bacterial or viral infection that they swell and become inflamed, causing tonsillitis. The infection may also be present in the throat and surrounding areas causing pharyngitis[8].

In the United States GABHS accounts for fever than 25% of all episodes of pharyngitis. Although endemic all year, streptococcal pharyngitis, its peak occurrence during later winter and early spring intermperate climates. Internationally Streptococcus pyogenes has a world wide distribution[9].

Pharyngitis is an inflammatory process of the pharynx, uvula and tonsils that can be caused by viral or bacterial infection and occasionally both. Distinguishing between these infections is important because rheumatic fever, acute glomerulonephritis, peritonsillar abscesses are most serious sequelae[10].

Streptococcus pyogenes (GABHS) is an etiological agent for diverse human diseases, including pharyngitis, pyoderma and severe invasive diseases in addition, the pathogen is associated with potentially life threatening sequelae such as post streptococcal glomerulonrphritis and acute rheumatic fever. In the northern territory of Australia, the incidence of acute rheumatic fever is very high among the indigenous population[11].

Pharyngotonsillitis is one of the most common respiratory disease in the community, particularly during childhood. Approximately 28% to 40% of these infections are estimated to be caused by group A beta hemolytic streptococcus (GABHS), which is considered the most important etiological pathogen in term of sequelae, and complications[12].

The 2000 National Ambulatory Medical Care Survey found that acute pharyngitis accounts for 1.1% of visit in the primary care setting and is ranked in the top 20 reported primary diagnosis resulting in office visits[13].

Group A beta hemolytic streptococcal pharyngitis accounts for 10-20% of sore throats[14].

In australia, sore throat is the second most common reason for which patients see their primary care doctor and 89% of general practitioners report that they routinely prescribe antibiotics for sore throat[15].

Group A streptococcus (GABHS) or Streptococcus phygenes are the most common cause of bacterial pharyngitis in children and adults worldwide. Other less common bacterial causes of pharyngitis include Corynebacterium diphtheriae, Niesseria gonorrhoeae and Arcanobacter hemolyticum. Bacterial agents such as non typable Haemophilus influenzae, Streptococcus pneumoniae, Viridans Streptococci, Staphylococcus aureus, Staphylococcus epidermidis and Morexella catarrhalis are considered normal flora of the pharynx[16].

Colonies of (GABHS) are usually small non pigmented and glistering[17].

Colonies are pinpointed, brittle, translucent, grey that may turn brownish on continued incubation, large and deepzone of β-hemolysis in comparison to colonize[18].

MATERIALS AND METHODS

A total of 300 subjects (250 suspected children and 50 healthy children as control) of age ≤5-15 years, were included and this age group was again divided into three groups: ≤5-8 years, 9-12 years and 13-15 years respectively.

The throat swab was taken in duplicate, for that the care was done, not to touch the tongue of sides of the mouth cavity, the swab was taken from the posterior pharyngeal wall. The first swab was for the performance of Rapid Strep Test according to the principle and procedure mentioned and the 2nd swab for the culture and further processing in the microbiological laboratory.

Culture: The culture was carried out on the Blood agar plates, after inoculation, the incubation of plates was carried out for 24-48 hours at 37°C, a cut on plate was made to observe the hemolytic effect of the organism. After 24 hours (on the next day) the reading of plates were taken, hemolysis was observed and the growth on the plates was also seen. To observe the sensitivity to Bacitracin (0.04U) a bacitracin disc was placed on the inoculated plate and zone of inhibition was observed.

Microscopy: A loop full of the growth from the Blood agar plate was taken and spread on the glass slide, dried and fixed, Gram's staining performed according to the standards mentioned, slide dried, a drop of cedar wood oil put and seen under oil emersion and the organisms identified as gram positive organisms agganed in short chain.

Catalase test: Catalase test was performed to differentiate between staphylococci 9catalase positive) from the streptococci (catalase negative). Test was carried out according to the standards mentioned and found negative. Therefore, the organism isolated was the Group A beta *hemolytic Streptococci*.

Antimicrobial sensitivity testing: The sensitivity was performed according to the standards mentioned for this purpose. Two drugs were used, penicillin (10 U) and Erythromycin (15µg), organism was found 100% sensitive to penicillin[19].

RESULTS

Table 1 shows the percentage of isolated cases positive for GABHS. Out of 250 suspected cases 24 (9.6%) were positive for GABHS while 226 (90.4%) were negative for GABHS.

Table No.1: Distribution of β-hemolytic Streptococci in Pharyngitis and Tonsillitis

Bacterial pathogens	Number	Percent
Positive for GABHS	24	9.60
Negative for GABHS	226	90.4

Table 2 shows the age wise distribution of the infection among ≥5-8 years, it was 13 (13.7%), among the age of 9-12 years it was 6 (6.2%) and among the age group of 13-15 years it was 5 (8.6%).

Table No.2: Distribution of B-Hemolytic Streptococci in Different Age Groups

Age group (Years)	Number	Percent
≥5-8 (n=95)	13	13.7
9-12 (n=97)	06	6.20
13-15 (n=58)	05	8.60

Table 3 shows distribution of tonsillitis and pharyngitis among 166 male children, 4 (2.4%) were positive for tonsillitis, while 11 (6.6%) were positive for pharyngitis, while in female children, which 84 in total, 3 (3.6%) were positive for tonsillitis and 6 (7.1%) were positive for pharyngitis.

Table No.3: Distribution of Positive cases for Tonsillitis and Pharyngitis Among Children

Gender	Tonsillitis		Pharyngitis	
	Number	Percent	Number	Percent
Male (n=166)	04	2.4	11	6.6
Female (n=84)	03	3.6	06	7.1

DISCUSSION

Pharyngitis and tonsillitis occupy a prominent place among the young children from 5-15 years of age, and also a most important cause of morbidity due to the post infectious complications produced by the *Streptococcus pyogenes* i.e. acute rheumatic fever and post streptococcal glomerulonephritis.

This study was planned to see the prevalence of the bacterial infection in the children of school going age, as a result among the bacterial causes and especially in this age group the *group A beta hemolytic Streptococci* was responsible for these types of infections.

Out of 250 clinically suspected children, 24 (9.6%) had the bacterial pathogens. The other remaining patients were suffering from the viral, fungal, allergy and atypical infections, which constitute (70-80%) and is responsible for the major portion of the illness. The other bacterias which can cause this type of infection are, Corynebacterium diphtheria, Streptococcus pneumoniae, Haemophilus influenzae, Morexella catarrhalis, Mycoplasma etc. also some fungi and Candida albicans can cause the same type of infection.

In this study, the cases isolated and which were positive for GABHS were 24 (9.6%) while the remaining 226 (90.4%) were negative for GABHS, while in 50 control cases the organisms isolated from the carrier children were 4 (8%). This number of isolation is less than other developed countries. This does not mean that in our population, the number of infected children is less, but the fact of matter is the advancement in the diagnostic procedures, the rate of education, especially the health education, general awareness, which these countries possess, is not available to our common man, and the customs of our society. A low percentage of these patients are attending public hospitals, the preference is given to the nearest Medical practitioner and even quakes to treat children. The child is not allowed to attend the school till he or she gets curved.

If this study is compared with the study done in Eskischir, Turkey, the organisms isolated were 13.16%, which is more than this study[20]. In this study, the comparison has been carried out between the male and female children suffering from pharyngitis and tonsillitis. The prevalence of pharyngitis was observed more among male as well as female patients which was 11 (6.6%) and 3 (3.6%) among male and female patients. The reason for this can be that the tonsillitis is more common among the age group 3-7 years after which the tonsils get shrunken and also due to the immunity function of tonsils.

CONCLUSION

- Group A beta hemolytic Streptococcal infection of throat constitute one of the major public health problems due to its post infectious complications.
- The data obtained provides information about the commonly prevalent bacteriological agent in pharyngitis and tonsillitis. Furthermore, it helps to outline the strategy towards appropriate therapy.
- It has also been concluded from this study that pharyngitis is more prevalenct than tonsillitis.

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Original Article

Suprapubic Cystolitholapaxy: A variable option for Paediatric Bladder Stones

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ABSTRACT

Objective: To assess the complications of suprapubic cystolitholapaxy as an alternative procedure for bladder stones in pediatric age group.

Study Design: Prospective analytical study.

Place and Duration of Study: This study was carried out in Department of Urology, University of Medical & health sciences Jamshoro from May 2006 to December 2010.

Materials and Methods: This study consisted of 148 patients admitted through the outpatient department of Liaquat University Hospital Jamshoro/Hyderabad. All patients underwent base line and specific investigations especially ultrasound of abdomen and pelvis as diagnostic modality for assessment of bladder stones . Inclusion criteria were all these patients who after counseling for this study and gave written consent parents. Irrespective of their sex and age < 12 years of age presented with bladder stone of <3 cm. Exclusion criteria included were patients having history of previous surgery, posterior urethral valves, stricture urethra and stone > 3 cm were excluded from the study. Results were prepared with help of tables and graphs. Data was analyzed through SPSS software.

Results:148 patients, 124 (83.78%) were boys and 24 (16.21%) were girls with ratio 5.1:1 respectively. Mean age of the patients was 5.3 years with range from 1 to 11 years. Twelve (8.1%)patients presented with retention of urine due to impacted stone at bladder neck or prostatic urethra while 16 (10.81%)patients had coexisting renal stones. The mean size of the stones was 1.9 cm with range from 1.1 to 2.8cm. Total operative time ranged from 25 to 40 minutes.Patients were discharged after observing first void on 2nd post-operative day 136 (91.89%) while twelve (8.11%) patients required further stay due to either suprapubic urinary leakage in 5(3.37%) or urinary retention in 7(4.72%) patients.

Conclusion: Percutaneous suprapubic cystolitholapaxy is safe and cost-effective alternative to open surgery in children with ≤ 3 cm vesical calculi.

Key Words: Vesical calculus, Children, Suprapubic Cystolitholapaxy.

INTRODUCTION

The incidence of urinary bladder calculi in the United States and the Western Europe has been steadily and significantly declining since 19th century, because of improved diet, nutrition and infection control[1]. Bladder calculi remain common in developing and under developed countries. Among children this disease is far more common in boys than in girls[2].

Unfortunately, no definite world wide data accurately reflects the frequency of bladder calculi[3]. Open surgery has the inherent problem of long scar, extended hospital stay and risk of infection. Optimization of available resources has been the need for our times[2]. There are different surgical treatment options including cystolithoclast, cystolithotomy etc. For relatively bigger vesical stones, cystolithoclast is not a feasible option. In this context percutaneous suprapubic cystolitholapaxy has gaining popularity. This study was carried out to assess the safety and feasibility of this procedure.

MATERIALS AND METHODS

This study was conducted at department of urology, Liaquat University of Medical & Health Sciences, Jamshoro from May 2006 to December 2010. All patients including boys and girls who were ≤ 12 years of age presented with bladder stone of ≤3 cm included in the study. Patients having history of previous surgery, posterior urethral valves, stricture urethra and stone > 3 cm were excluded from the study. The diagnosis and size of the stone was based on X-ray abdomen KUB and ultrasound pevlis. All interventions were done under general anesthesia after standard preoperative workup. Data was analyzed through SPSS software.

Procedure Details: After identification of stone in bladder (Figure no. 1) and assembling of instruments, patient was positioned in lithotomy position & routine cystoscopy with 10 fr straight channel cystoscope was done. Bladder was filled with normal saline through cystoscope till it became palpable. A stab was made

1cm above the pubic symphysis and trocar with cannula (26 fr) introduced with rotatory movement at wrist and its position was monitored with cystoscope. As soon as the trocar and cannula entered into the urinary bladder, cystoscope was withdrawn keeping the sheath of trocar inside. Maurmyers stone punch (25fr) was introduced via sheath in to the urinary bladder for removing the stone (Figure no.2), small stones were taken out in toto while larger one broken into small pieces. All fragments were removed and after ensuring complete bladder clearance of the stone fragments. Sheath was with drawn and single stitch of prolene 2/0 was applied. Foley's catheter 10 Fr was retained for 48 hours. Infiltration of bupivacane (local anesthetic agent) was done into subcutaneous area. A small dressing was applied.

RESULTS

Out of total 148 patients, 124 (83.78%) were boys and 24 (16.21%) were girls. Mean age of the patients was 5.3 years with range from 1 to 11 years (Chat-I). Twelve (8.1%) patients presented with retention of urine due to impacted stone at bladder neck or prostatic urethra while 16 (10.81%) patients had coexisting renal stones. The mean size of the stones was 1.9 cm with range from 1.1 to 2.8cm. Measurements and diagnosis of stones were based on X-Ray and ultrasound KUB. (Figure I). Total operative time ranged from 25 to 40 minutes. All patients became stone free at the end of the procedure on the basis of cystoscopy. Indwelling catheter retained for 48 hours as per protocol of the procedure in all patients. Out of 148 patients, 136 (91.89%) were discharged after observing first void on 2nd post-operative day while twelve (8.11%) patients required further stay due to either suprapubic urinary leakage in 5(3.37%) or urinary retention in 7(4.72%) patients respectively. All these patients were treated successfully with recatheterization and antibiotic cover with third generation cephalosporin for 5-7 days. (Chart. II).

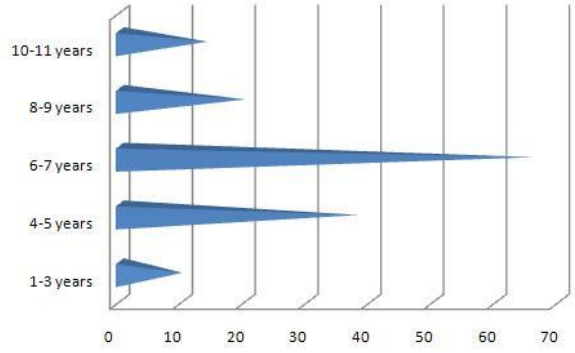

Chart No.1: Age Range

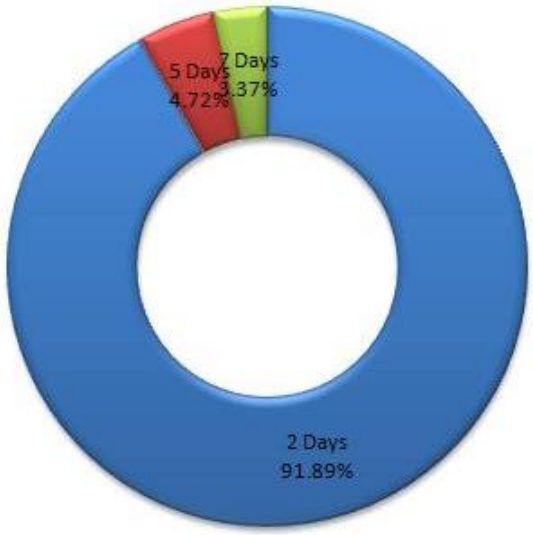

Chart No.2: Hospital Stay

Figure No.1: Pre-operative X-ray KUB

Figure No.2: Video endoscopic view of percutaneous suprapubic cystolitholapaxy

DISCUSSION

Open surgery is undoubtedly still the most appropriate treatment for large and hard bladder stones[4]. There are various methods have been used successfully for the

treatment of bladder stones including endoscopic methods[5,6,7]. Safety and success of transurethral approach has been established in adults[8]. There are special problems using transurethral approach in children because of the delicate and small caliber of urethra and lack of proper pediatric instruments[9]. In keeping with the trend towards minimally invasive surgery, suprapubic cystolitholapaxy is studied as an alternative procedure[9, 10]. Similar approach has been adopted in various centers with minor differences in technique[5,6,7,8]. The youngest child in our study was 1 years old, where as in another study youngest child was of 2 $^1/_2$ years [6, 7].

Minimum time taken for the procedure in our study was 25 minutes as compare to Noorani et al[6] where it was 15 minutes. Majority (91.89%) of our patients discharged after 48 hours. In a comparative study[5] with transvesical cystolithotomy patients took average 7.33 days in hospital postoperatively. There operative time was 70 minutes on average. In our study, the stones were disintegrated and retrieved successfully in all cases. Complications rate remained 8.11% in our study. In another series[8,11,12] with transvesical approach it was 20% and with transurethral cystolitholapaxy it was 5%. Comparable results have been documented from many distinguished centre of the world[13,14,15,16,17]

CONCLUSION

Suprapubic percutaneous cystolitholapaxy is safe and cost effective alternate to open surgery in children with less then 3cm vesical calculi. It reduces morbidity, hospital stay & cost of treatment.

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Original Article

Comparison of Laparocopic Appendisectomy (LA) Versus Open Appendisectomy (OA) (A Prospective Randomizing Audit of 1000 Cases)

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ABSTRACT

Objective: In this Study Comparison between Laproscopic & Open Appendisetomy with regard the length of operation, complication, conversion rate, postoperative hospital stay and time of return to normal activity has been made in order to assess the benefits and feasibility of the procedures.

Study Design: Prospective Randomizing study.

Place and Duration of study: This study is carried out at Shaheed Mohtrama Benazir Bhutto Medical University (SMBBMU) Hospital and at Sachal Medical Centre Larkana with effect from Jan: 2002 to Jan: 2011.

Patients and Methods: All patients with diagnosis of acute appendicitis were enlisted and randomized to either laparoscopic appendisectomy (LA) or Open appendisectomy (OA). All patient received pre-operative antibiotic. The operative time was calculated beginning with incision or insertion of Trocar till the wound was fully closed. Patients those were converted from LA to OA were considered separately. Assessment regarding the return to normal activity and work determined by questioning during the postoperative follow-up.

Results: This randomized study of 1000 cases in which 450 cases underwent OA and 550 patients scheduled for the LA procedure but successfully performed 505 and remaining 55 underwent Lap-Converted open appendisectomy. From this study reveals that the common presentation of appendicitis is simple appendicitis next is perforated appendicitis, while the reasons for lap converted open cases were of appendicular mass, perforated appendicitis, gangrenous appendicitis but 2 cases were noted of having normal appendix with pelvic inflammatory disease (PID). The conversion rate remains higher in our study. Operative time in OA/LA remain 81/40minutes. Wound infection rate in OA/LA remain 5.4%/3.0% Hospital stay in OA/LA 5-6/1-2days. Patient return to normal activity in OA/LA group 14days/7days. However early return to job found in LA than OA group of patients.

Conclusion: After the long assessment of this study also compared with world literature that the LA is superior because of less pain, minimum wound infection, less operative time. Having the, cosmetically acceptable small scar, less hospital stay & early return to normal activity and job. Therefore this is mature time to say that LA is superior procedure in our setup while can replace open appendisectomy (OA).

Key word: Laparoscopic appendisectomy (LA) and Open appendisectomy (OA).

INTRODUCTION

Laparoscopic cholecystectomy has been widely accepted as the treatment of choice for symptomatic cholelithiasis[1]but the laparoscopic appendisectomy is now recommended as the procedure of choice for the diagnosis and management if acute appendicitis[2] Appendicitis was first recognized as a disease entity in sixteenth century and was called perityphlitis. McBurne in 1889 described the clinical features of acute appendicitis. Though the open appendisectomy (OA) is used long ago but in 1983, a German Gynecologist Semm performed the first laparoscopic appendisectomy (LA)[3]. Minimal invasive surgery has a considerable impact in the common surgical technique so that after the laparoscopic cholecystectomy, laparoscopic approach for the treatment of acute appendicitis is becoming popular. It is safe, and efficient procedure for all forms of appendicitis[4]. Complicated appendicitis (CA) is a common surgical emergency in childhood, more so in developing countries with poor patient education and limited access to hospital with advance surgical facilities. In the era of minimal surgery there is still controversy regarding the modulatory of treatment for completed appendicitis, whether the open appendisectomy (OA) or laparoscopic appendisectomy (LA)[5]. The aim of this Prospective randomized comparative study is to evaluate the out come of OA versus LA, and also to compare the approach and results with recent international standard practice.

PATIENTS AND METHODS

All patients from 6 year to 61 years of age with the presumptive diagnosis of acute appendicitis were randomized to have surgery performed using the OA or LA. Before randomization, patients were informed of the risks and benefits of each procedure and signed a consent form to participate in the study, which extended over a 9-year period (From Jan: 2002 to Jan: 2011. All patients received 1 g of ceftriaxone (Safe-one) preoperatively, and the antibiotics were continued based on the clinical course. Patients randomized to the OA group had a McBurney right lower quadrant muscle splitting incision. LA were done using a standardized

approach involving an open technique for trocar insertion. A 10-mm Hassan trocar was placed in the periumbilical area with a 12-mm trocar placed in the right midabdomen and a 5-mm trocar placed in the suprapubic location. The mesoappendix was divided using Endo-Clips and the appendix was divided using an Endo-GIA of yellow clip removed through the 12-mm port. The procedures were performed by consultants at Shaheed Mohtrama Benazir Bhutto Medical University (SMBBMU) Hospital & Sachal Medical Centre at Larkana. Operative time was calculated, from the time of incision until the time of wound closure. The postoperative course was monitored for number of hospital days, and complications. For determination of when patients returned to normal activity and work, they were questioned during follow-up visits.

RESULTS

This study includes the 1000 patients while under the procedure of OA 450 cases while remaining 550 under went through LA procedure but successfully performed LA 495 while 55 cases were lap converted open. The age ranges from 6-61years but the mean age turn 27.5, while the Gender wise male 672 (67.2%) female 328 (32.8%),while the presentation of appendicitis were such that maximum number of simple appendicitis 570 (75%), perforated appendicitis were 157 (15.7%), appendicular abscess 53 (5.3%) appendicular lump 40 (4.0%) gangrenous appendicitis 74 (7.4%) while some patient were having normal appendicitis 106 (10.6%). Lap-converted open patients were suffering through either appendicular lump, perforated appendicitis or gangrenous appendicitis but two patients had normal appendix with evidence of pelvic inflammatory diseases (Table No.1).

The reasons for conversion to an open procedure included excessive bleeding, inadequate exposure secondary to adhesions in perforated appendix 22 while 16 patients due to appendicular lump 15 patients converted due to gangrenous appendicitis, while 02 patients converted due to pelvic inflammatory diseases where the appendix was within normal limits.

The mean operative time in the OA group was 81 minutes; for the LA group, 40 minutes. The lap converted open patients required 119 minutes for the completion of surgery.

The average hospital stay was 5-6 days in the OA and 1-2 days in the LA group. The operative times were short in the laparoscopic group with acute appendicitis than in the complicated appendicitis. The antibiotic in LA & OA received 2-3 days & 4-6 days respectively.

There were significant differences between the patients in the laparoscopic and open groups regarding time required for return to normal activity 7 days versus 14days, and time required to returned to work was 20 days versus 28 days overall or in any of the groups based on pathology.

The cost of the hospitalization is compared for each group. The overall cost was greater in the OA, but this was not statistically different. The costs in the perforated group were significantly more for those patients having an OA. That the cost in the open perforated group was almost double that in the LA group due to some longer length of stay for the patients in the OA group.

Table No.1 Demographic characteristics of all appendisectomy patients (n=1000)

Parameters	Patients
Age (years)	
Mean	32.7
Range	60-61 years
Gender	
Male	672 (67.2%)
Female	328 (32.8%)
Types of operation	
Open appendisectomy (OA)	450 (45%)
Scheduled to perform (LA)	550 (55%)
• Successfully Perform(LA)	495
• Converted to open	55

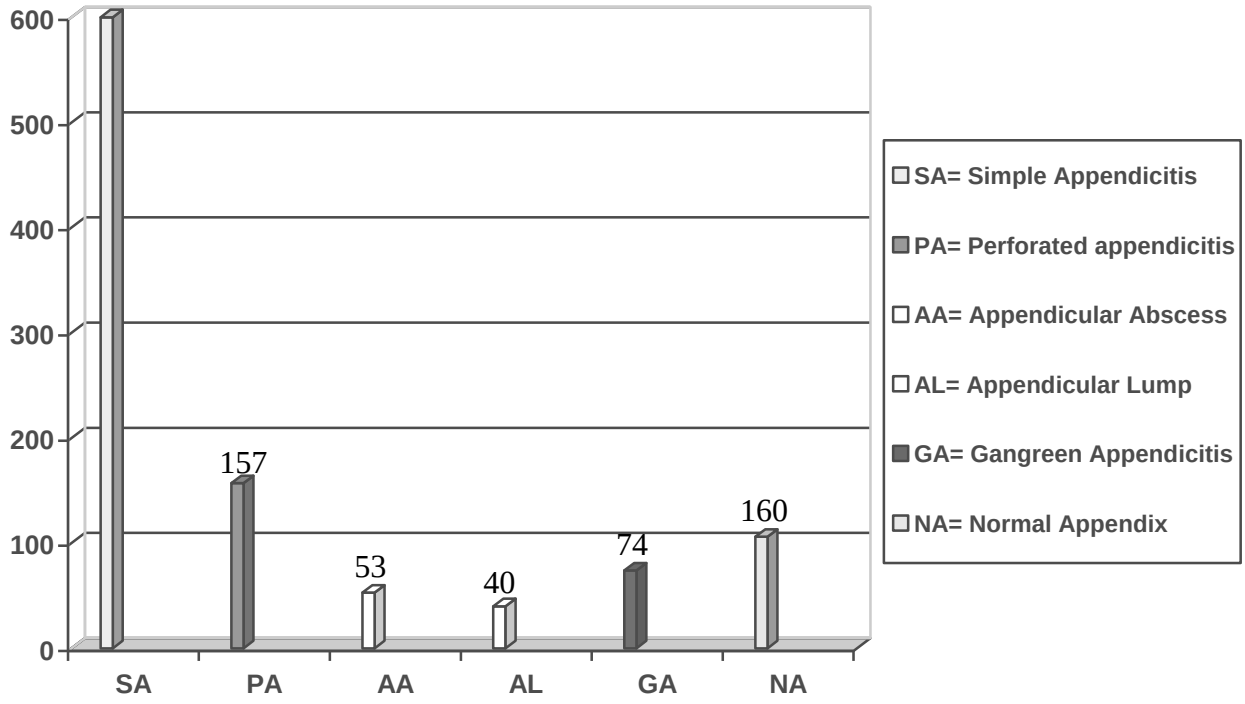
Table No.2: Comprising of Complications, Mortality, Operative Time and Hospital Stay in OA and LA Group

Parameters	OA (505)	LA (495)
Complications		
Wound infection	28 (5.54%)	15 (3.03%)
Traumatic injury	03 (.59%)	03 (.60%)
Intra abdominal abscess	03 (.59%)	03 (.60%)
Incisional Hernia	03 (.59%)	Nil
Port hernia	Nil	03 (.60%)
Operative Time		
35 mints	Nil	45 (49.4%)
45 mints	Nil	250 (50.55%)
I Hour	254 (50.2%)	Nil
> 1 Hour	251 (49.7%)	Nil
Mean Time	81mints	40mints
Hospital stay		
1 day	Nil	200 (40.4%)
2 days	Nil	295 (59.6)
3-4 days	222 (43.9%)	Nil
5-6 days	283 (56.2%)	
Normal activity	14days	7days
Time to return job / work	25days	20days
Intra abdominal abscess	03 (.50%)	03 (.50%)
Wound infection	28 (5.54%)	15 (3.01%)

There was intra operative complication in the open group, consisting of small-bowel injury in three cases in each group but in LA group Diathermic serosal burns on small intestine wall. There were ten readmissions in

the OA group and nine in the LA group, an average of 4 days and 8 days after discharge, respectively. Reason for readmission was nausea and inability to tolerate a diet.

Wound infections occurred in 28 (5.4%) in OA and 15 (3.0%). Intra-abdominal abscesses occurred in three open and three laparoscopic patients. Each of the intra abdominal abscesses was treated successfully by percutaneous drainage, except for one pelvic abscess in a patient who had an open perforated appendix and underwent transrectal drainage without complication. The incision hernia in OA group 3 cases (.59), but in LA group patients 3 (.60%) cases of port hernia (Table No.2).



Graph 1: Presentation of Different Types of Appendicitis

DISCUSSION

Appendectomies can be performed by open or laparoscopic technique, but to select it which procedure is superior. In this study, we report trends in the surgical treatment of appendicitis at Shaheed Mohtrama Benazir Bhutto Medical University (SMBBMU) Hospital and Sachal Medical Centre Larkana. Most of our patients were underwent open appendisectomy 50.5% while, 49.5% underwent laparoscopy. The age incidence in our study the mean age 27.2 years study by Mustafa Khalid[3] 25.7 Zahoor[8] in his study mentioned 32.7 Soomro el al the mean age is 44 years, Soomro[11] in his other study 45 years.

Incidence of appendicitis ratio, in our study of male and female is 2.1:1. In study of atta male female ratio 1.2:1, larry mention male female ration 1.4:1, study of Zahoor[8] male female ratio 2.1:1, Deepak[6] et al mentioned male female ratio 2.3:1.9, Soomro[5] has mentioned male female ratio 1.2:1.

The conversion rate was 10%. While conversion rate by Zahoor[8] Al is 1.8%, conversion rate by Deepak[6] is 3.3% in early experience of Soomro[10] the conversion rate 8.97% in other study of Soomro[5] conversion rate is 4.4%. In study of Holecz[14]rate is 7.7% while 10% is conversion rate in study byCervini[15].

Wound infection is significantly higher in OA 5.54% versus LA group 3.03%. While compare to world literature in study of larry[7] C, reveals wound infection rate in OA 4.4% versus LA 3.6% but in study of Deepak[6] reveals the wound infection in OA group 43.8% but in LA group 11.5% study of Mustafa[3] Khalid reveals non in LA group versus in OA 5.6%. In study of Saudi Arabia, Zahoor[8] reveals, in OA 2.4% and LA 1.7%. Golub[9] and Colleague found a wound infection rate for LA was less than half of rate in OA group. The reduction on number of wound infection is possible due to small size of port site wound compare with large wound in OA patients. Mean operative time in our study in cases of OA is 81minutes but in LA is 40minutes. Study of Soomro[5] and colleague is 48minutes in LA patients, study of Mustafa Kamal[3] the mean operative time by OA is 55minutes while in LA group is 25minutes another study of Deepak[6] in the mean time of OA is 90.3minutes while in LA patients 86.7mintues. In study of Zahoor[8] mentioned that average time in OA is 84mintues while in LA average time requires 35mintues. In experience of larry[7] C

reveals average time require in OA is 81mintues but in LA group time is 102mintues. In the study of Lorenz [12] time taken 46minutes, Ehleeta[13] by LA 40minutes.

Post operative Stay in our study in OA group minimum 3days maximum 6days (3-6 days) in LA group minimum 1day and maximum 2days (1-2) in study of Soomro[5] mean hospital stay is 24hours, in study of Mustafa Khalid[3] hospital stay in OA patient remains 3days and in LA patients for 24hours. Study of Deepak[6] length of hospitalization in OA group 7.3days while in LA 5.4days. Zahoor[8] mentioned that study in OA patients 2.6days while in LA group 1.89 days. Alvarez[17] discharged his patient in less than 24hours while Soomro[5] in his study mentioned 1day postoperative hospitalization in LA group. Minimum complication and short hospital stay is a clear advantage. Heinzeimann[16] Haleczy[14] similar results were found by several investigation vallina[18], Attwood[19], Anena[20], Tate[21]. Complication other than wound infection like Incisional hernia seen in OA .59% while in LA port hernia is .60%, in study of Soomro[5], Mustafa Khalid[3], Deepak[6], Larry[7] & Zahoor[8] all has mentioned non of the case of Incisional hernia noted in their studies, LA in complicated appendicitis has seen reported after increasing safty, shorter length of hospital stay, less pain and quicker return to normal activity by with fewer complication. Lintula[22], Prasad[23].

CONCLUSION

While comparing both of procedure it is observed that in LA there is less operative time, small scar, which is more cosmetic and acceptable, with minimum hospital stay, and early return to normal activity compare to open appendisectomy. But the operative room cost for LA is considerably higher and experience is important. While in OA which can be performed even by a Junior Surgeon, Finally author is of opinion that LA is superior can replace to OA.

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