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	170	55.01 %
• 9 – 12 weeks	139	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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