Original Article

Caesarean Sections

Caesarean Sections at Mardan Medical Complex: a One Year Review

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ABSTRACT

Objective: To review the caesarean sections performed at Gynae A unit at Mardan Medical Complex, KPK, Pakistan, over a period of one year.

Study Design: Retrospective study.

Place and Duration of Study: This study was conducted at the Mardan Medical Complex (MMC) during the study period from 1st January 2014 to 31st December 2014.

Materials and Methods: The records of 630 patients who underwent caesarean section were analysed.

Results: During the study period, there were 5409 deliveries and 630 caesarean section sections, thus giving a caesarean section rate (CSR) of 11.6%. 84.5% were emergency caesarean sections, and 15.4% were elective caesarean sections. The rate of primary caesarean sections was 79.5% and repeat caesarean sections was 20.4%. The most common indication was fetal distress and repeat caesarean section.

Conclusion: A trial of vaginal birth after caesarean section in appropriate cases and use of cardiotocography for continuous fetal heart monitoring in labour, with confirmation of suspected fetal distress through fetal blood acid-base studies are recommended. A prospective study may reveal some of the other reasons for the increase CSR.

Key Words: primary caesarean section, repeat caesarean section, fetal distress

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INTRODUCTION

The caesarean section is now the most commonly performed major operation around the world and the first surgical procedure performed independently by residents/trainees in obstetrics-gynaecology.[1] It is one of the oldest obstetric operations in the world with over a third of women in many developed countries undergoing caesarean section when they give birth.[2] Its rates have been rising worldwide over the past few decades. The World Health Organization has identified an ideal caesarean section rate (CSR) for a nation of around 10-15%. [3,4] This is based on studies that show improving maternal and neonatal morbidity and mortality as rates rise up to this level, but minimal improvements or even negative health outcomes as the rate increases past 10%. [5,6]

The purpose of this study was to know the overall CSR to analyze the different indications for primary and repeat caesarean sections.

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MATERIALS AND METHODS

A retrospective study was conducted at the Department of Obstetrics and Gynaecology Unit A Mardan Medical Complex, KPK, from January 1st 2014 – December 31st 2014. It is a tertiary care hospital where the majority of cases used to be referred from the periphery. All the patients admitted through emergency and out-patient department who had undergone caesarean section were included in the study. Patients' demographic status, socioeconomic status, age, parity, indication and type of caesarean section and neonatal outcomes were noted down. The study was approved by the hospital ethical committee, and a statistical analysis of the results was carried out on the latest version of SPSS.

RESULTS

Table No. 1: Distribution of deliveries during one year. (n=5409)

Type of Delivery	No. of patients	Percentage
Vaginal delivery	4409	81.51%
Vacuum extraction	241	4.45%
Forceps delivery	79	1.45%
Emergency C/S	533	9.85%
Elective C/S	97	1.79%

During the study period, the total deliveries within the hospital's Gynae A Unit were 5409, out of which 630 were through caesarean section thus, giving a CSR of

11.6% of total deliveries, shown in **Table 1**. There were 645 babies delivered during the period of the study, among which 95% (613/645) were singletons and 3% (19/645) were multiple gestation deliveries. The sex distribution of the neonates shows a preponderance of male 53% (342/645) over female 47% (303/645). Emergency caesarean section was performed on 84.5% (533/630) and elective caesarean section on 15.4% (117/630) of patients. The rate of primary caesarean section was 79.5% (501/630) and repeat caesarean section was 20.4% (129/630), details of which are shown in **Table 2**. The age range of the patients was between 16 and 45 years. Socioeconomic status showed 68% of the patients being poor and 32% in the lower middle class.

Table No. 2: Mode of caesarean section

Mode	No. of patients	Percentage
Emergency C/S	533	84.60%
Elective C/S	97	15.39%
Primary C/S	501	79.50%
Repeat C/S	129	20.49%

Table No. 3: Gravidity Status in patients.

Gravidity Status	No. of patients	Percentage
Primigravida	246	39%
Primipara	111	17.6%
Multipara	273	43.1%

Table No. 4: Indications for primary caesarean sections

Indication	No. of patients	Percentage
Fetal Distress	97	19.3%
Obstetric Labour	67	13.3%
APH	58	11.5%
Pre-eclampsia/ Eclampsia	31	6.18%
CPD	31	6.18%
Negative(?) Lie	31	6.18%
Postdate	7	1.39%
PROM	31	6.18%
Failed Induction	16	3.1%
Oligohydramnios	15	2.99%
Breech Presentation	49	9.7%
Triplet	3	0.59%
BOH	10	1.99%
Non-progress of labour	17	3.39%

Among 630 patients, 39% (246) were primigravida, 17.6% (111) were primipara, and 43.1% (273) were multigravida, shown in **Table 3**. The most common indication in primary caesarean section was fetal distress at 19.3%, followed by obstructed labour at 13.3% and breech presentation at 9.8% (see **Table 4**).

The most common indication in repeat caesarean section group was previous 1 caesarean section at 60.4% followed by previous 2 caesarean section at 34.1% and then previous 3 caesarean section at 5.42% (see **Table 5**).

The birth weight of the neonates ranged between 500 grams to 4800 grams. 90% (547) had an APGAR score of more than 6/10 at 5 min, while 10% (65) of the neonates had an APGAR score of less than 6/10 at 5 min. There were 5.1% (33) stillbirths. During the study period there were 93 perinatal deaths, thus giving a perinatal mortality rate of 144/1000. A majority (78%) were peripartum and early neonatal deaths. This was a result of obstructed labour and birth asphyxia in the patients referred too late from the periphery.

Table No. 5: Indications for repeat caesarean sections

Indication	No. of patients	Percentage
Previous 1 C/S	78	60.4%
Previous 2 C/S	44	34.1%
Previous 3 C/S	7	5.42%

There were 4.1% (26) cases of postpartum haemorrhage (PPH). There were 4 maternal deaths. One each as a result of eclampsia, APH, PPH, and lastly DIC, giving a case fatality rate of 0.63% or, in other words, approximately one maternal death for every 157 caesarean sections performed at the hospital during the study period.

DISCUSSION

The incidence of caesarean deliveries and surgically completed pregnancies has been on the rise for the past 20 years. In North America and some countries in Western Europe during the last couple of years, the CSR was about 21%.[7] In our study at the Department of Obstetrics and Gynaecology at Mardan Medical Complex, the caesarean section rate was 11.6% (630/5409). This result was within the 15% limit recommended by the World Health Organisation for developing countries.[8] When we compare our results with the other studies done in Pakistan, only one study by Sultana A[(9)] showed a similar CSR (11.8%), which is in accordance with ours. Other studies from Pakistan showed much higher figures of 21.1% by Khawaja NP[10], 44.8% by Ehtisham S[11] and 45.1% by Shamshad[12]. This difference may be due to the fact that doctors in our hospitals maybe conscious of the WHO proposal that there is no justification for any region to have a CSR higher than 10-15%.[13,5,14] Other reasons may be judicious use of instrumental delivery in our hospitals, our trainees are trained to do instrumental deliveries. Looking at results outside Pakistan, ours is comparable with the study conducted by Geidam AD et al[8] in which the CSR was also 11.6%. Taking into account population dynamics in high-income countries, increasing maternal age, increased maternal demand,

fear of litigation and a shift in maternal health; these factors may result in increased CSR.

The rate of primary caesarean section was 79.5% which is comparable to the studies conducted by Mathew M[15], and Ehtisham S[11], and the top three indications were fetal distress (19.3%), obstructed labour (13.3%) and APH (11.5%). The results are comparable with the study conducted by Ehtisham S (11)(R). Previous one Caesarian section, previous two Caesarian sections, followed by previous three Caesarian section, were the most common indications for repeat cesarean section and the results are comparable to studies conducted by Mathew M[15] and Ehtisham S[11]. In our study, the 79% rate of primary caesarean section was the major contributor to a high rate of emergency Caesarian sections, so the aim should be to reduce the rate of primary cesarean sections. Each case should be thoroughly evaluated to determine the possibility of vaginal delivery.

Fetal distress was the main indication for primary cesarean sections. In the majority of patients with presumed fetal distress, babies delivered with good APGAR scores but with meconium-stained liquor. The understanding of CTG findings are subjective and also one of the reasons for increased Caesarian sections done for fetal distress. There should be facilities for continuous fetal heart rate monitoring and samples from the fetal scalp blood should be taken for acid-base studies to confirm true fetal distress. Involvement of consultant obstetrician in the decision-making is very important.

Previous scars were the main indication for repeat Caesarian section in our study. A trial of vaginal delivery should be considered in the hospital with appropriate facilities, services, and staff for a prompt emergency Caesarian section birth. Reluctance to give a trial of vaginal delivery after cesarean section may be due to the fear of litigation related to the risk of uterine rupture and associated increased maternal and fetal morbidity and mortality. The studies show that the women delivered by cesarean section were less likely to have a subsequent pregnancy (66.9%) compared with those having spontaneous vaginal delivery (73.9%) and instrumental vaginal delivery (71.6%), and they were more likely to have problems like APH, preterm and prolong labour, morbidly adherent placenta and risk of malpresentaition.[16,17]

Average blood loss in our study was from 0.7 to 1.0 litre. 4.7% patients went into postpartum haemorrhage and they were successfully managed with uterotonics and replacement of blood products, except for two, one of whom underwent a caesarean hysterectomy and survived and the other died due to the PPH, because of uncontrollable haemorrhage.

All fetal complications occurred in the emergency Caesarian section group. 10% of the fetuses were born with an APGAR score of less than 6 out of 10 at 5 mins, and there were 5.1% stillbirths. The major cause of low fetal APGAR scores was birth asphyxia. Other studies have reported similar facts.[18,19] Perinatal mortality of Caesarian sections was 144 per 1000 caesarean births, and was only observed in the emergency Caesarian section group. Our figure is quite higher than the figure given by an earlier study conducted by Daniel CN[20]. The reason was absence of NICU facility, and last-moment referrals from the periphery with complications. There should be in-time referrals of patients who may need a Caesarian section.

CONCLUSION

On the basis of the analysed data, we conclude that in the Department of Obstetrics and Gynaecology, Mardan Medical Complex, the mainstay is vaginal birth. The CSR is much lower than that of the other centres in Pakistan, but we cannot ignore the fact that the CSR has been following a rising trend over the past few years and it is worrisome. Especially the fact that perinatal outcome is not consistently improving. If unchecked, the rate might reach epidemic proportions.

As previous Caesarian section was a major indication, it is recommended that a trial of vaginal birth after a Caesarian section should be encouraged in the appropriate cases. The use of CTG for continuous fetal heart rate monitoring during labour and confirmation of suspected fetal distress by fetal scalp blood acid-base studies is also recommended. Proper training of skilled birth attendants, and general practitioners is needed to minimise last-moment referrals from the periphery.

It was a retrospective study and there is a need for a prospective study, to know the rising trends and maternal and fetal outcomes in the country.

Author's Contribution:

Concept & Design of Study:	Samia Tabassum
Drafting:	Sadia Ali & Samia Tabassum
Data Analysis:	Rukhsana Karim & Samia Tabassum
Revisiting Critically:	Sadia Ali & Rukhsana Karim
Final Approval of version:	Samia Tabassum

Conflict of Interest: The study has no conflict of interest to declare by any author.

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