Frequency Rate and Indications of Cesarean Sections at Prince Zaid Bin Al Hussein Hospital - Jordan

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ABSTRACT

Objective: To determine the frequency rate and indications of cesarean sections at Prince Zaid Bin Al Hussein Hospital, Tafileh-Jordan.

Methods: A clinical records review was conducted from 1st June 2009 to 30th May 2010. The review included those patients who underwent urgent and elective Cesarean Sections were analyzed. It includes all the pregnant women booked in the antenatal clinic, and the unbooked patients admitted in early labor for which Cesarean Sections were indicated later. Simple descriptive statistical methods (frequency, mean and percentage) were used to describe the study variables.

Results: Out of 2400 deliveries during the study period, 450 cesarean sections were performed with a frequency of 18.75%. Of these 450 patients 128 (28.4%) were primigravida. There were 216 (48%) primary and 234 (52%) repeated cesarean sections. One hundred sixty-seven cesarean deliveries (37.1%) were performed on women in the above 30 years age group and those who were parity 1-3 (47.3%). Of the primary cesarean section group; the commonest indication was failure to progress (30.1%) and of the repeated cesarean section group; the commonest indication was two or more cesarean section (26%). The review showed that all cesarean sections performed had specific indications. The three most common indications for cesarean sections are fetal distress, failure to progress in labor and repeated cesarean sections

Conclusion: Preventive efforts should be directed towards decreasing the frequency of primary cesarean deliveries by appropriate management of labor. Efforts to lower cesarean section rate should focus on the areas of fetal distress, failure to progress in labor and by attempting vaginal birth after cesarean delivery.

Key Words: Cesarean section, Frequency rate, Indications

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Introduction

The steadily increasing global rates of cesarean sections have become one of the most debated topics in maternity care, as its prevalence has increased alarmingly in recent years.[1,2] Cesarean section is a subject of professional controversy over the ideal rate of cesarean section, though there is no clear evidence on the relative benefits of higher or lower rates. The overall cesarean section rates have increased progressively over many parts of the world, including Jordan, in particular in the past ten years.[1,2,3] The indications for cesarean sections are usually maternal, fetal, physician related factors, or a mixture of the three.

There are many factors that contribute to the variations in cesarean section rates, such as practice culture, practice style, hospital environment, and source of payment, patient's preference, and socioeconomic status. A clinical practice guideline can reduce the cesarean section rates without increasing adverse outcomes.[4] The large difference in the rates of cesarean section in women in the

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Table I: Number of cesarean sections in relation to age and parity.

Age (years)	Number	%
Below 20	33	9.1
21-25	127	28.2
26-30	115	25.5
Above 30	167	37.1
Parity		
Primipara	128	28,4
1-3	213	47.3
4-6	59	13.1
>7	50	11.1

Table II: Indications for primary cesarean sections.

Indication	Number	%
Failure of progress	65	30.1
Fetal distress	81	20.2
Antepartum haemorrhage	9	4.2
Cephalopelvic disproportion	14	6.5
Breech Presentation	10	4.6
Bad obstetric history	4	1.8
Failed induction	6	2.7
Abnormal lie	7	3.2
Multiple pregnancy	5	2.3
Cord prolapse	3	0.96
Preeclampsia/Eclampsia	12	5,5
Total	**216**	**100**

Table III: Indications for repeat cesarean sections

Indication	Number	%
Two or > Cesarean sections	61	26
Failure of progress	48	20.5
Fetal distress	54	23
Cephalopelvic disproportion	13	5.5
Antepartum haemorrhage	8	3.4
Failed induction	10	3.1
Bad obstetric history	5	2.1
Breech presentation	9	3.8
Abnormal lie	9	3.9
Cord prolapse	2	0.8
Preeclampsia/Eclampsia	11	4.7
Multiple pregnancy	4	1.7
Total	**234**	**100**

Table IV: Overall indications for cesarean sections.

Indication	Number	%
Failure of progress	113	25
Fetal distress	135	30
Two or > cesarean sections	61	13.5
Cephalopelvic disproportion	27	6
Failed induction	16	3.5
Breech presentation	19	4.2
Antepartum haemorrhage	17	3.8
Preeclampsia/eclampsia	23	5.1
Abnormal lie	16	3.5
Bad obstetric history	9	2
Multiple pregnancy	9	2
Cord prolapse	5	1
Total	**450**	**100**

public and the private sectors is due to more unwanted cesarean sections among private patients rather than to difference in preference for delivery.[5] High or rising rates of cesarean delivery do not necessarily reflect demand for surgical delivery.[5]

Cesarean section is a major surgical procedure with possible serious consequences and should be performed in the presence of specific and clearly defined indications. In a study by Wang *et al*[6] it was found that the frequency of complications is 2.2 times higher in the cesarean section group compared with the vaginal delivery group. Those requesting cesarean sections with no conventional medical indications should be advised of the potential risks.[6]

Cesarean delivery is associated with an increased risk of postpartum maternal death.[7] Knowledge of the causes of death associated with this excess risk informs contemporary discussion about cesarean delivery on request and should inform preventive strategies.[7]

Clinicians should be aware of the increased risk for maternal re-hospitalization after cesarean deliveries to low risk mothers when counseling women about their choices.[8] Policies, such as active management of labor, trial of scar and better definition of the deliveries in which fetal monitoring will be useful in the diagnosis of fetal distress, all will achieve acceptable cesarean section rates.[9]

Marfatlal[10] was found that with proper selection, appropriate timing and close supervision, trial of vaginal birth after previous cesarean section eliminates the need for a large proportion of repeat cesarean section. The aim of this to determine the frequency rate and indications of cesarean sections at Prince Zaid Bin Al Hussein Hospital, Tafileh-Jordan.

Methods

This review study was conducted out at Prince Zaid Bin Al Hussein Military hospital in the south of Jordan-Tafileh. During the study period from 1st June 2009 to 30th May 2010, there were 2400

deliveries, out of them 450 cesarean sections were performed.

The study included all pregnant women booked in the antenatal clinic and unbooked patients admitted in early labor for whom cesarean section was indicated later.

It also included all those cases coming in emergency at any time for which cesarean section was indicated. The data were obtained from the patients files of those who underwent urgent or elective cesarean sections. The information abstracted contained age, parity, mode of each delivery and the stated indication for each cesarean section. Simple descriptive statistical methods (frequency, mean and percentage) were used to describe the study variables.

Results

During the study period, there were 2400 deliveries at Prince Zaid Bin Al Hussein Hospital of which 450 were by cesarean sections. The cesarean section rate was 18.75%.

Of these 450 patients, 322 (71.6%) were multigravida (parity range 1-13), 128 (28.4%) were primigravida. The rate of cesarean sections of patients in the age group above 30 years was 37.1 % (Table I). There were 216 (48%) primary cesarean sections and 234 (52%) repeated cesarean sections.

The indications for primary cesarean sections are shown in Table II, repeated cesarean sections in Table III, and overall indications in Table IV. The most common indication of all cesarean sections was fetal distress 30%, followed by failure to progress in labor 25% (Table IV). The most common indication in repeated cesarean section group was two or more cesarean sections. This contributed to 26%, followed by fetal distress and failure to progress in labor 23% and 20.5% respectively (Table III). In the primary cesarean section group, the commonest indication was failure of progress 30.1% followed by fetal distress 20.2% (Table II).

Discussion

While the global frequency of cesarean sections is unknown, it is clearly increasing. During the 1980s and 1990s, the rates of cesarean section increased progressively through out the world, although in some countries more than others.

The medical impact of a rising cesarean section rate on both short and long-term maternal and neonatal complications and the associated costs of these complications must be taken into account. The increase in cesarean section rate was appreciated to be an" American problem" is becoming now an international crisis.[11] Cesarean section rates are rising in the United States and were at as all time high at 29% in 2004.[12] and 30.5% in 2008.[1]

Currently, there is no evidence to suggest that elective cesarean section delivery is safer than labor. Should such proof be forthcoming, then undoubtedly all women should offered elective cesarean delivery.[11] A recent study.[13] showed that cesarean delivery independently reduces over all risk in breech presentation and risk of intrapartum fetal death in cephalic presentation but increases the risk of severe maternal and neonatal morbidity and mortality in cephalic presentations. The prevalence of dense intra-abdominal adhesions and of bladder injury during cesarean section was higher in women with a history of three or more previous cesarean sections than in women with one previous cesarean.[14]

In our study, the cesarean section rate was 18.75%. It is still lower than the international rates, but it is clearly increasing. Analysis of the Jordanian cesarean section rates in the period between (1990-1992) and (1999-2001) were 8% and 10.9% respectively.[9] In this study, fetal distress was found to be the most common indication of total cesarean sections at a rate of 30% followed by failure of progress in labor, which was 25% .

Continuous Electronic Fetal Monitoring (EFM) was introduced to detect fetal distress. It was hoped that this would reduce deaths during birth and the frequency of cerebral palsy. However, while the use of EFM has been directly associated with an increase in cesarean delivery, it has not led to better health outcomes.[15] When fetal distress is suspected, this should be confirmed by fetal blood sampling before proceeding with cesarean section. In the study by Irvine and Shaw[16] it was found that there was a 32% reduction in the cesarean section rate for fetal distress after the introduction of fetal blood sampling, unfortunately, this technique is not available in our unit. The use of an objective assessment of fetal hypoxia would have lowered the rate of cesarean section delivery.[17]

In our study, failure to progress in labor contributed to 25% of the total cesarean section rate. Any labor that appears to be progressing slowly could fall into this category. Failure to progress is a common indication for unplanned cesarean section.

Studies suggest that some doctors and patients can be too quick to abandon plans for a vaginal delivery; this explains why cesarean section rates vary so much from hospital to hospital and doctor to doctor. Many obstetric factors responsible for this increase in cesarean section rate should be evaluated.[18]

Accurate diagnosis of failure to progress and cephalopelvic disproportion is essential, because in many cases the problem is a dysfunctional labor. Therefore, diagnosis and early correction of this problem and active management of labor will correct the problem in the majority of cases. We should try to find ways and means to avoid cesarean section since it is not convincing that the increase in cesarean section rate will be definitely associated with a reduction in perinatal mortality.[18] Ben and Ekele[19] found that the perinatal mortality among the cesarean delivery is high (11.1%) and the main cause of death was severe birth asphyxia, also, they showed that the indication with the poorest outcome was prolonged obstructed labor, and emergency cesarean section was more likely than elective to result in a perinatal loss.

In this study history of two or more cesarean sections was found to be the most common indication of repeat cesarean section contributing to 26% and the third commonest indication of the overall cesarean sections 13.5%. Any program designed to reduce the cesarean delivery rate must address both primary and repeated cesarean deliveries. In the United States, the number of pregnant women who have had cesarean deliveries is high, and it is therefore difficult to reduce the overall cesarean delivery without reducing the number of elective repeated cesarean deliveries. Two important strategies for reducing cesarean deliveries are to increase the number of vaginal deliveries among women who have had cesarean deliveries and to increase the number of operative vaginal deliveries.[20]

The efficient way to lower the repeat cesarean rate is trial of labor, and the way to reduce the number of primary cesareans is in practicing of the guidelines for various indications.[21]

Vaginal Birth After Cesarean (VBAC) is relatively safe and should be encouraged. However, all medical procedures are associated with risks. An increasing number of prior vaginal births after cesarean section is associated with a greater probability of (VBAC) success, as well as a lower risk of uterine rupture and perinatal complications in recurrent pregnancies.[22]

In our study breech presentation contributed to 4.2% of all cesarean sections. Managing a breech delivery begins antenatally where external cephalic version will be considered. National Institute for Clinical Excellence (NICE) guidelines on antenatal care from October 2003 stated that all women who have an uncomplicated singleton breech at 36 weeks gestation should be offered external cephalic version. This technique is successful in around 50% of cases, thus reducing the frequency of breech presentation at labor.

The term Breech Trial was completed in 2000 and its results have influenced the management of breech delivery greatly. In our study, all women with breech presentation were delivered by cesarean section. The trial concluded that perinatal mortality, neonatal mortality and morbidity are significantly reduced by elective cesarean delivery of breech presentation than planned vaginal breech delivery. Mulhium and Turki.[23] showed that safe vaginal breech delivery could be achieved in majority of cases without major adverse perinatal outcome. More recently, an observational prospective study with an intent-to-treat analysis conclude that, in units where planned vaginal delivery is a common practice and when strict criteria are met before and during labour, planned vaginal delivery of singleton pregnancy with breech presentation at term remains a safe option that can be offered to women.[24]

This study showed that Cesarean Section rate is increasing in our hospital, but still lower than the international rates.

Conclusion

Preventive efforts should be directed towards decreasing the frequency of primary cesarean deliveries by strict and appropriate management of labor. Efforts to lower cesarean section rate should focus on the areas of fetal distress, failure to progress in labor and by attempting vaginal birth after cesarean delivery.

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