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RISING TREND AND INDICATIONS OF CAESAREAN SECTION AT THE LIAQUAT UNIVERSITY OF MEDICAL & HEALTH SCIENCES

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ABSTRACT:

Objective: To determine the frequency of caesarean section, to analyze and compare the trends of indications of caesarean section during the year 2003 and 2009,so as to introduce the measures to control the caesarean section rate.
Study Design: A retrospective Descriptive Study.
Subjects and Methods: A retrospective review of caesarean section performed at Gynaecology & Obstetrics Department of Liaquat University Hospital in two groups, 1st Jan –Dec 2003 and 2nd Jan –Dec 2009.ALL women of any age and parity who underwent the caesarean section were included. . While the cases with normal and operative vaginal deliveries and cases of rupture uterus were excluded. Data on rate and indications of caesarean section were extracted from medical records which were reviewed and analyzed on spss version 16. Frequencies as well as percentages were calculated and compared between these two groups of women.
Results: The total number of deliveries during the study period were 1101 in group 1 and 1595 in group 11. Out of them 261 (23.70%) and 491(30.78%) women underwent caesarean section in group 1 and group 11 respectively. The frequency / rate of caesarean section with main indications in percentages were shown in Table 1. There is definite rise (7.08%) in rate of caesarean section in group 11 as copare to group 1, which was mainly due to previous 1 caesarean section (5.97%) and previous >1 caesarean section (2.98%).
Conclusion: The rate of caesarean section increases year by year. The frequency of first caesarean section and repeat CS is high in our setup. The most effective mean to control increasing CSR is by adopting the policy of vaginal birth after previous C-Section, prevention of first C-Section and regular audit of CS in department.

Key Words: Caesarean section , Caesarean section rate, Repeat caesarean section.

INTRODUCTION:

Worldwide rate of caesarean section has been steadily increasing beyond the recommended level of 15% by World Health Organisation (WHO) as being optimal, for best outcome of mothers and babies 1-2. In many countries caesarean section has reached the epidemic proportion, hence become the subject of public intrest and a topic of continuing debate regarding maternal health system. High caesarean section rate have been reported not only in developed countries but also in non developed countries3. CSR in USA is 29.1%4, England 21.5% 5,Brazil 50.8% [3], China 37.7% 6 , India 32.6% [7].
The reasons for this increase in caesarean section rate are not obvious, and some what complex. The indications for performing caesarean section are keep in changing now a days, and mostly in favour of fetus than mother. The majority of studies on caesarian section are agree that three primary indications for performing caesarean section are cephalo pelvic disproportion, previous caesarean section and fetal distress. These three indications represent 60-80% of overall caesarian section indications and nearly half of them are previous caesarian section[8-9-10]. CS can be a life saving procedure for both

mother and baby and worth the risk involved, when medically indicated .CS delivery however doesnot necessarily indicate good medical practice, as it may even cause iatrogenic damage, and worse perinatal outcome was observed when CS is under or over performed [11] . The appropriate use of caesarian section like any other medial intervention should be based on evidence of risks and benefits . There is a known and inevitable increased risks of maternal death and morbidity following CS and there is no evidence that maternal and child health has improved as a result .So the CS epidemic is a reason for immediate concern and deserves serious international attention, however its rising rate is more worrying in developing countries because of its adverse consequences in forthcoming pregnancies due to lack of antenatal and intranatal care by experienced staff , and threat to national resources .The purpose of this study to determine the frequency of CS, to analyze and compare the trends of indications of CS during both years 2003 and 2009, so as to introduce the measure to control the CSR in our setup .

SUBJECTS AND METHODS:

A retrospective review of caesarean section performed at Gynaecology & Obstetrics Department of Liaquat University Hospital in two groups, 1st Jan –Dec 2003 and 2nd Jan –Dec 2009. ALL women of any age and parity who underwent the caesarean section were included in the study. Only the main indication was included in women with two or more indications. While the cases with normal and operative vaginal deliveries, and cases of rupture uterus were excluded.

The data on caesarean sections attributable to specific indications, and CSR were extracted from medical records and computed for the year 2003 and 2009 respectively. Statistical analysis involved descriptive statistics such as Frequencies as well as percentages were calculated and compared between these two groups of women on SPSS version 16.

RESULTS:

The total number of deliveries/births during the study period were 1582 in group 1 and 1098 in group 11. Out of them 478 (30.21%) women in group 1 and 258 (23.49%) women in group 11 underwent caesarean section respectively as shown in Table 1.

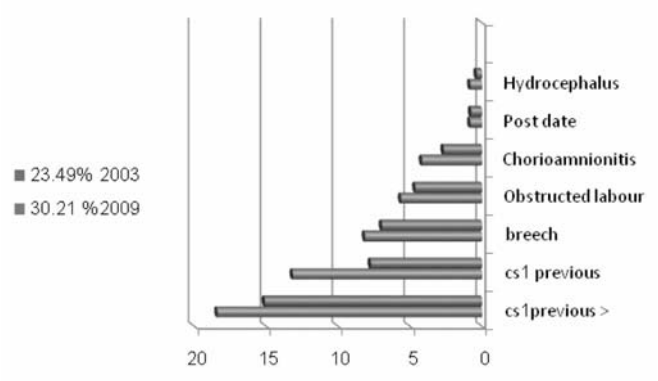
Table 1.

INDICATION OF CS	no of pts 478/1582 2009% 30.21		no of pts 258/1098 2003% 23.49	
previous > 1cs	88	18.41	39	15.11
previous 1 cs	63	13.17	20	7.75
breech	39	8.15	18	6.97
Obstructed labour	27	5.64	12	4.65
Chorioamnionitis	20	4.18	7	2.71
Post date	4	0.83	2	0.77
Hydrocephalus	4	0.83	1	0.38
Contracted pelvis(CPD)	33	6.90	24	9.30
Fetal distress	37	7.74	23	8.91
APH	34	7.11	22	8.52
PIH Eclampsia	37	7.74	20	7.75
Failed progress of labour	22	4.60	13	5.03
BOH	13	2.71	10	3.87
Malpresentation	13	2.71	8	3.10
Twin pregnancy	9	1.88	9	3.48
IUGR	3	0.62	7	2.71
Precious pregnancy	5	1.04	4	1.55
Failed induction	3	0.62	3	1.16
Cord prolapse	2	0.41	1	0.38
Previous repair	1	0.20	0	0
Pelvic deformity	2	0.41	0	0
Cardiac dis	1	0.20	0	0
No any clear indication found	18	3.76	15	5.81
Total	478	99.86	261	99.91

The results are expressed in numbers and percentage

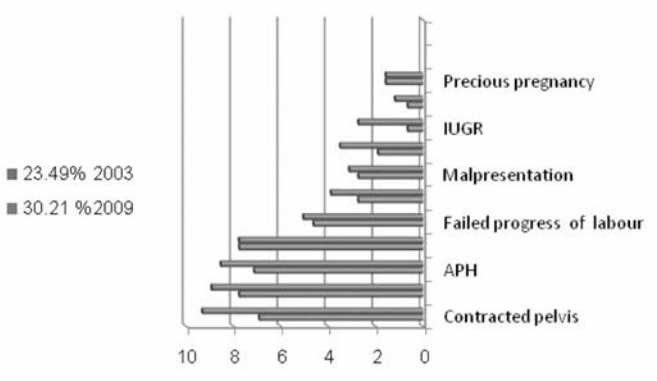
The most common indication of caesarean section was repeat CS seen in 151(32.12%) of cases and 59 (22.68%) of cases in year 2009 and 2003 respectively. Out of them 63(13.17%) of patients had CS due to previous 1cs and 88(18.41) patients underwent CS due to previous > 1cs in year 2009. While in 2003, 20 (7.75%) of patients due to previous 1cs and 39(15.11%) of womens underwent CS due to previous > 1cs .Other main indications of CS in year 2009 were breech (8.15%), fetal distress (7.74%), PIH Eclampsia (7.74%), APH (7.11%), (CPD) Contracted Pelvis (6.90%), Obstructed labour (5.64%),Failed progress of labour (4.60%) and Chorioamnionitis (4.18%) of cases. While in year

Figure 1: Rising Trend Of Major Maternal Indications.



Year 1 : 2009 . Year 11: 2003

Figure 11: Declining Trend Of Major Maternal Indications.



Year 1 : 2009. Year 11: 2003

2003 the main indications of CS were (CPD) Contracted Pelvis (9.30%), fetal distress (8.91%), APH (8.52%), PIH Eclampsia (7.75%), were breech (6.97%),and Failed progress of labour (5.03%) .Other less common indications of both years are listed in Table 1. There is definite rise (6.72%) in rate of caesarean section in group 1 as compare to group 11, which was mainly due to previous 1 caesarean section (5.97%) and previous >1 caesarean section (2.98%), while decline was seen mainly due to contracted pelvis and foetal distress. Very little change was seen due to PIH,eclampsia as shown in graph 1 and 11 .

DISCUSSION:

Over the past century, there has been a steady rise in CSR throughout the world, reflect a change in the obstetric practice. In our study the frequency of caesarean section in our study was 30.21 % in year 2009, similar results reported from Welsh[12], while a study conducted from abbotabad reported the high CSR of 45.1% in year 2007 [13]. The increase in frequency of caesarean section was 6.72% (2003-2009) , compared to 4.4% (1997-2004) increase reported from another tertiary care hospital of Pakistan [14]. In another study conducted at Nigeria, similar increase in CSR 6.7% (2000-2005) was reported [15].

In year 2003, 22.86% cases the caesareans section was done due to previous one or >1CS, this increases to 32.12% cases in year 2009. Among 9.26% of cases of caesareans section 5.96% rise was due to previous 1CS, the second commonest cause of caesarean section in year 2009 as compare to 2003 the 5th common cause of performing caesarean delivery. Previous 1CS accounts for 13.17% cases in 2009 while Geidum reported higher results (17.16%) cases [15] . Previous caesareans section constitute the highest single indication for repeat caesarean section, because obstetrician still considered the vaginal birth after previous caesarean as a high risk option .The decision to perform first caesarean delivery is very important, unless there is clear justification for it, otherwise carefully supervised trial of labour with use of partogram is necessary. Among first time mothers when cervix is unfavourable, labour induction make a caesarean delivery more likely. So proper evaluation of patients plays a key role in decision making, and efforts should be taken to avoid first CS whenever possible, same reported by local and international studies[16-17]. In our setup no trial was given to previous two or more scars due to lack of continous FHR monitoring facility so risk of maternal and fetal complication. RCOG recommended that all women previously delivered by one lower segment caesareans section should be offered an opportunity to labour during their next pregnancy by promoting a trial of scar or labour [5-18]. ACOG has also published evidence based guidelines for VBAC as the preferred method of delivery after one previous caesareans section [19]. The National Sentinel CS Audit Report stated that the clinical group contributing to the overall CSR is that composed of mainly the women at term are previous caesareans section with singleton pregnancy (44%) [5] .

In practice it is important to provide experience based skill, competence and evidence based services to women 20.

In view of these, proper counseling and informed consent of patients regarding life threatening complications like scar rupture and haemorrhage, and proper selection of patient are necessary steps for trial. However to reduce the risks of adverse outcome VBAC should be conducted in tertiary care hospital where there is immediate access to an emergency caesareans section .Gonen concluded in his study that with a well defined protocol, a trial of labour after CS seems to be as safe for the mother and infant as planned caesareans section8,While Mutias [21] reported the total rate of VBAC was 58-1% and Tahmina from Peshawar concluded that 62.8%% of the patients with one previous caesareans section for non recurrent cause can be successfully delivered vaginally[22]. Risks of repeat caesareans section include longer operating time, caesarean hysterectomies, increase the risk of multiple placental abnormalities like placental abruption, placenta previa and morbid adherence of the placenta to the scar giving rise to placenta accrete, increta and percreta . Maternal morbidity and mortality and fetal death are some important risks. Repeat caesareans section has an adverse impact on fertility and psychological status of women[23]. Thus an obstetrician needs to look at the issues not only from present caesarean section but in future also. Besides this it is burden on national resources in countries like us.Breech was the third commonest indication of cause of caesarean section in year 2009 as compare to 2003 in which breech was the 6th common cause of performing caesarean delivery. The Term Breech Trial was a landmark study published in year 2000 strongly support planned CS versus vaginal delivery has influenced clinical practice in the management of term breech pregnancies[24]. Increasing practice of external cephalic version may have decreased the number of breeches at term, and policy of selective planned vaginal delivery reduces the likehood of caesarean section rate. Obstructed labour was still the common cause of CS in our circumstances , more CS (5.64 %) was performed for in year 2009 as compare to (4.65%) in year 2003. All cases of obstructed labour were mishandled which were referred to us in very late stage where CS was unavoidable even when the fetus was the dead. Proper antenatal care is crucial .Use of partogram in labour for early diagnosis of abnormal labour patterns, early referral of cases to tertiary care hospital are important steps to reduce the CS . Other main indications of performing CS in both years were cephalopelvic disproportion 9.30% in year 2003 as compare to 6.90% in year 2009, fetal distress 8.91% and 7.74% in year 2003 and 2009 respectively and APH 8.52% in year 2003 as compare to 7.11% in year 2009. In our study fetal distress was picked up by intermittent auscultation, CTG and ultrasound. Patients awareness about decreased fetal movements, and improvement in obstetric care in recent years could be the reasons for the decline seen in this study. Although the availability of CTG and heavy reliance on it has led to increased in frequency of CS. However the combined use of electronic fetal monitoring and use of fetal scalp PH estimation has been reported to reduce the diagnosis of fetal distress and resulting CS [25-26]. CPD is another potential area for reduction in CSR which could be brought about by changes in management of labour and delivery, as there is lower threshold to perform CS in women with mild to moderate CPD. The use of oxytocin to augment labour may play a role in reduction of CS for CPD. However further trials should be done to provide evidence based services to women .In Warsaw study, index of placenta previa decreased from 2.49% in 1985-88 to 0.57% in 2000-127 . In our study out of 8.52% and 7.11% cases of APH in year 2003 and 2009 respectively , placenta previa was the indication of CS in 5.81% of cases compared to 5.02% in 2003. As the incidence of CS continues to rise worldwide, the problem of placenta previa and placenta accrete is likely to be common.

Hypertensive disorders of pregnancy accounted for caesarean

delivery in same proportion ie, 7.74% , 7.75% in both years 2003 and 2009 respectively, were mainly due to severe pregnancy induced hypertention and eclampsia carries higher mortality and morbidity than vaginal delivery . So these high risk cases without obstetric indication should be reassessed carefully for risks and benefits to reduce the CSR, as there is low threshold to perform CS[28]. Proper antenatal care and early referral to tertiary care hospital are key stone. The non-clinically indicated caesarean section (NCSs) represent CSs without any specific medical indications may be due to women preference for CS and their belief in safety and comfort. However in our circumtances CS accepted as last resort of delivery as women considered birth as a natural process and only in two cases of caesarean delivery maternal request is found along with other obstetric indication, so cannot represented in separate group. Although scenario has changed now a days and many women request CS without any obstetric indication as first choice of delivery. FIGO states that performing CS for nonmedical reasons is ethically not justified [29].

Rising trend over the years is worrisome especially that the perinatal outcome is not consistently improving[15]. If unchecked, the rate might reach at unacceptable levels. A large study in Latin Amrica showed CS has not necessarily improved perinatal outcome contrary to data from developed country [11].

Although the indications of caesarean did not change much over the time in both years as shown in Table 1. The probable reason might be attitudinal change of doctors most likely because of the increasing number of deliveries over the years, and there might be overall lower threshold concerning the decision to carry out a caesarean section. Obstetrician should abide by ethics in clinical practice and carefully evaluate the indication in every CS and take an unbiased decision before performing CS.

Furthur more there is need for a prospective study to evaluate the reasons for the increasing caesarean section in our environment.

CONCLUSION:

Caesarean section deliveries may have serious implications for the health of women undergoing them. Therefore the performance of CS is justified only when the obstetric risks outweigh the risks of the procedure itself.

In this study there has been the significant rise of CSR, and the strong determinant for that were previous scars. The effective measures to reduce this souring CSR are adopting the policy of vaginal birth after previous CS. Other means to control this are ECV for term breech and selective vaginal delivery in case of breech , careful and accurate diagnosis of fetal distress, use of partograph for early diagnosis of dystocia, and most important is public awareness regarding antenatal care.

Regular audit of caesarean section to compare our own record in department and case to case basis discussion to determine whether an alternate route of delivery would have resulted in achieving the same goals of maternal and fetal safety.

Well controlled trials should be conducted to compare CS with vaginal delivery as currently there is little evidence available.

However one should not expect the caesarean section rate to drop without reeducating the public and the health professional that most births proceed uneventfully without interference, and that many adverse outcomes can neither be anticipated nor prevented by caesarean section.

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