CAN WE REDUCE RISING RATE OF CESAREAN SECTION IN A PRIVATE SECTOR HOSPITAL?

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ABSTRACT

Introduction: A global trend of rising Cesarean section (C-section) rates has been noted during the last two decades. The present study records the 5-years C-Section rate in Rehman Medical Institute (RMI). Additional objectives were to investigate the causes of high rates of both primary and repeat C-section in RMI, to reevaluate and readdress various indications of C-section and to propose ways of reducing this rising C-section rate in RMI.

Materials & Methods: A five years (2011 to 2015) retrospective review was conducted in Jan-Mar 2016, using a computer based data coding system, as well as review of the maternal case sheets, discharge slips and statistics registers. Year-wise and average C-section rates were calculated from these records and compared with local, national and international C-section rates.

Results: A total of 2581 C-sections were performed during last 5 years including both primary C-sections and repeat C-sections for various indications, giving an average of over 500 C-sections per year with an average rate of 50.05% of total deliveries during the five-year period.

Key Words: Cesarean Section; Cesarean Section, Repeat; Vaginal Birth After Cesarean (VBAC); Trial of Labor (TOL); Labor, Obstetric.

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INTRODUCTION

Cesarean Section (C-section) is the birth of an infant through abdominal route,[1] due to adverse effects of labor process on mother or infant or both, in certain conditions.

C-section birth is associated with short term and long term consequences[2] e.g. risks of anesthesia and surgery, prolonged hospital stay, neonatal intensive care admissions and higher costs compared to vaginal birth. There are more risks of repeat C-section as compared to primary C-section.

In the last few years (last 2 decades) it is noted that there is a rising trend of C-sections throughout the world leading to a very high C-section rate.[3,4]

Many international health organizations e.g. FIGO, WHO and ACOG realized this rising trend of Cesarean birth and decided to take steps to reduce this rate; they have set a target of 15% C-section rate by the year 2020.[5] Therefore future strategies are being adopted throughout the world to achieve this target by making guidelines for primary C-section and subsequent vaginal birth.

In order to find the C-section rate in Rehman Medical Institute (RMI), a five years' retrospective review was done to show the trend of C-section delivery since 2011 to 2015. Recommendations to reduce this rising C-section rate in RMI are also presented.

MATERIALS & METHODS

A five year retrospective review was conducted using a computer based data coding system because RMI has computerized all the patient records.

In our own department we have kept our statistics record very religiously. Every month statistics meeting is conducted regularly.

All maternal records including labor record history sheets and discharge slips were reviewed of patients who had undergone C-section for various indications including both primary and repeat C-sections. All the indications in each case were thoroughly evaluated for justification. The strengths of this review are the 5-years long duration and enough number of subjects/cases available to find out valid maternal and fetal outcomes.

The patient population and catchment area is quite vast in RMI. Almost 60% of our clientage is form across the border (Afghanistan) while 40% of clientage is from local population of Khyber Pakhtunkhwa.

We get mixed types of obstetric cases, regular admissions, booked cases and emergency cases. All the C-sections were decided and performed by consultant level; 100% record of all the cases were available and reviewed thoroughly.

RESULTS

Total of 2581 C-Sections were performed in the Department of Obstetrics & Gynecology at RMI from January 2011 till December 2015. Various indications of C-section are shown in Table 1.

Table 1: Indications of C-sections in patients of RMI (2011-2015).

1. Primigravida with contracted pelvis.	22. Pregnancy with heart disease.
2. Primigravida with breech presentation.	23. CPD (Cephalo Pelvic Disproportion).
3. 2nd Gravida with breech presentation with previous scar	24. Grade 2 & 3 MSL (Meconium Stained Liquor) in first stage of labor.
4. Malpresentations e.g. Transverse Lie, Breech & Unstable Lie.	25. Major degree of Placenta Previa.
5. Cord around the neck.	26. Abruptio placenta.
6. Fetal intolerance of labor.	27. Pregnancy with HELLP (Hemolysis, Elevated Liver Enzymes, Low Platelet Count) syndrome.
7. Labor dystocia.	28. Gestational diabetes.
8. IUGR (Intra Uterine Growth retardation).	29. Gestational Cholestasis.
9. Severe PET (Pre Eclamptic Toxemia).	30. Pregnancy with fibroid.
10. Eclampsia.	31. Unexplained Intrapartum Hemorrhage.
11. Macrosomic baby.	32. Neglected Transverse Lie.
12. Macrosomic baby with previous scar.	33. Failed vacuum and failed forceps.
13. Failed TOL (Trial of Labor).	34. Severe oligohydramnios.
14. Previous 2, 3 and 4 C-sections.	35. Second twin with transverse lie.
15. Elderly Primigravida.	36. Postdated pregnancy.
16. Multigravida with BOH (Bad Obstetric History).	37. Monochromic diamniotic twins.
17. Twin pregnancy with previous scar.	38. Twin to twin syndrome.
18. Multiple pregnancies.	39. Abnormal fetal heart pattern during labor.
19. Conception after ART (Artificial Reproductive Technology) e.g. ICSI (Intra Cytoplasmic Sperm Injection)	40. Maternal own choice.
	41. Influence of the care provider / attendants.
20. IUD (Intra Uterine Device) with obstructed labor.	42. Pregnancy with severe pneumonia.
21. Pregnancy with PIH (Pregnancy Induced Hypertension).	

Table 2 shows the year-wise distribution of C-section rates based on total deliveries and total admissions. This includes both Primary and repeats C-Sections, including booked and non-booked cases. On average, 516 C-Sections were performed on yearly basis, giving an average rate of 50.05%.

Table 2: Year-wise distribution of total admissions, mode of delivery and C-section rates at RMI.

YEAR	TOTAL ADMISSIONS	C-SECTIONS	NVD	TOTAL DELIVERIES	RATE / TOTAL DELIVERIES	RATE / TOTAL ADMISSIONS
2011	1682	442	444	886	49.88%	26.27%
2012	1724	448	436	884	50.68%	25.98%
2013	1722	505	467	972	51.95%	29.32%
2014	1909	537	526	1063	50.52%	28.13%
2015	1904	649	704	1353	47.96%	34.08%
Totals	**8941**	**2581**	**2577**	**5158**	**50.05%**	**28.87%**

DISCUSSION

Rate of delivery by abdominal route has increased in the last 25 years throughout the world and this rate is variable in different countries and in our own country as well. Rising C-Section rate in an obstetric setup reflects poor obstetric practice.[6, 7]

RMI rate compared with other leading large tertiary care public sector hospitals is shown in Table No. 3.

Table 3: C-Section Rate in public & private sector hospitals of Khyber Pakhtunkhwa

HOSPITAL	C-SECTION RATE	PERIOD
Rehman Medical Institute, Peshawar (RMI)[a]	50.05%	2011 - 2015
Lady Reading Hospital, Peshawar (LRH)[b]	24% - 27%	2011 - 2015
Hayatabad Medical Complex, Peshawar (HMC)[b]	17% - 19%	2011 - 2015
Ayub Teaching Hospital, Abbottabad (ATH)[b]	40%	2006--2007

a = private sector hospital; b = public sector hospital

Analysis of all the indications for C-Sections performed during this five years period at RMI disclosed wide variability in obstetric practice within the same department resulting in an overall increase in C-Section rate; in particular, some over-used and under-used obstetric practices are also responsible for high C-Section rate e.g. Cord around the neck, MSL in second stage of labor, non-encouragement for Vaginal Birth After C-Section (VBAC).

Table 4 provides the variable C-Section rates from the USA for the years available since 1970. Also shown are the VBAC rates for three available years.

Table 4: Primary C-Section Rate in USA

YEAR	RATE
Cesarean Section	
1970	05.5%
1980	16.5%
1996	21.0%
2001	32.0%
2007	23.0%
Vaginal Birth After Cesarean (VBAC)	
1996	28.5%
2006	08.5%
2012	21.0%

In USA C-Section rate remained stationary between 1996-2006 i.e 21% but from 2006-2009 it suddenly rose to a level of 32%, but after 2010 it dropped again to 21%. This decline in C-Section rate is due to widespread acceptance of VBAC.[6, 7]

In public sector hospitals in Khyber Pakhtunkhwa like LRH and HMC a lower rate was observed as compared to Private Sector Hospitals (Table 3). In Ayub Teaching Hospital Abbottabad, the rate of C-Section in 2006-2007 was 40%, while in LRH this rate is 24-27% during the last five years and in HMC this rate is quite low 17-19% in the last five years. So data indicate wide regional, national and international variability in C-Section rate.

Rehman Medical Institute is a Centre of Excellence in the private sector of Khyber

Pakhtunkhwa. We deal with all types of normal and mismanaged, referred cases in our obstetric practice, where best possible care is provided to these complicated and high-risk cases with good backup support. We also have a very good neonatal care unit. But unfortunately a very high C-Section rate is found in this five year retrospective review, which poorly reflects the obstetric care practices in such set up.

The reason we founds are as follows:-

- Early Admission and early induction with non-favorable cervix.
- Diagnosis of active phase of labor at 3-4 centimeter dilatation.
- Use of Epidural analgesia before active phase of labor.
- Fetal intolerance of labor.
- Labor dystocia.
- Undiagnosed malpresentation.
- Fear of litigations.
- Misuse and wrong interpretation of CTG tracings.
- Obstetrician distress.
- Relative or care provider distress (Relative influence and pressurize for active intervention.
- Wrong counseling for cord around the neck.
- Level of experience of the consultant In Charge.
- Lack of effective regular peer review to achieve quality obstetric practice.
- Lack of protocol, guideline for intrapartum management.
- Non encouragement for TOL in case of previous scar.

Many obstetricians avoid TOL in case of previous scar due to suspected uterine rupture and due to litigations. In fact time and emotional stress involved in conducting a TOL in previous scar are far greater than that required in performing a schedule repeat C-Section.[8, 9]

Cases of upper segment scar or inverted T-Shape scar or J-Shape scar are not candidates for TOL, therefore, proper guideline should be evolved and followed by the whole obstetric team of that department for TOL in previous scar and VBAC.[10,11]

It is noted in this retrospective review that many such labor management practices are responsible for increasing C-Section rate in a private setup e.g.

- Early admission and early induction of labor.
- Diagnosis of active phase of labor at 3-4 cm dilation.
- Misuse and misinterpretation of CTG.

A 20 minutes CEFM is recommended for each laboring women on admission, But CEFM is recommended for high risk cases only with proper and correct interpretation.[12]

The efficacy of CEFM has not been proven, or documented, the only benefit of EFM during labor is reduction in the rate of still birth, on the other hand, Intermittent Auscultation during labor is recommended for low risk cases.

Many RCT in USA during year 2004-2005 were conducted to compare the effect of CEFM and IA. It was found that C-Section rate was high in EFM group as compared to IA group i.e. 2.8%, 1/5% respectively.[12]

In this retrospective review 50% of our cases had C-Section during labor due to dystocia.

As documented in literature that cervical dilatation is slow in latent phase and it is rapid in active phase of labor, so more than 4 hours delay in dilatation of cervix is an indication for intervention. Hence correct diagnosis of dystocia should be made by reevaluation of the labor progress chart by consultant level.

Therefore proper intrapartum care practices and guidelines should be followed by the obstetric team.[12]

We should encourage the pregnant lady to remain active after 37 weeks of POG in order to go into spontaneous natural labor and primigravida should be admitted in established labor and should avoid epidermal analgesia,[13] keep the

patient well hydrated and shift the patient after full dilatation to the delivery room.[14, 15]

In this review it is noted that all those cases admitted in established labor with natural, spontaneous onset of labor and with continuous midwifery care, ended up in successful vaginal birth.

It was also noted in this review that majority of VBAC cases ended up with satisfactory maternal and perinatal outcome, with very few cases of scar rupture and intrapartum death.

Many women do not opt for VBAC due to concerns about its safety. The obstetric team has to be very vigilant and do intrapartum monitoring very carefully in order to achieve a successful outcome and in such cases one-to-one care provider are recommended. The world Health Organization (WHO) and Healthy People 2020 have suggested the ideal C-Section rate should be around 15%.[11, 14, 15]

Therefore, strategies that effectively lower this rising C-Section rate are urgently needed, to achieve this target, by decreasing the number of primary C-Section is the critical first step.

Recommendations for reducing rising C-Section Rate

- A proper protocol/guideline should be decided in the Department, regarding intrapartum management.
- Each consultant should follow a suggested, accepted protocol and guideline for primary and repeat C-Section.
- Every primigrivida with low risk pregnancy should have TOL and TOVD.
- C-Section by choice should be discouraged.
- Effective peer review is essential for quality medical practice.
- With an integrated comprehensive patient safety program, we can achieve improved patient outcome, reduce litigations and low primary C-Section rate.[8,11]
- By decreasing primary C-Section rate and by increasing VBAC rate we can surly reduce C-Section rate in RMI.
- High acceptance of TOL and TOVD after primary C-Section, we can reduce repeat C-Section rate as well.[11]
- In right circumstances and good obstetric practice environment, rising rate of C-Section can definitely be reduced in OBGY department of RMI.
- Continuous labor support practice by TBAS should be encouraged.
- Proper and vigilant intrapartum case should be provided to each and every laboring women to promote vaginal birth.[12]
- Avoid epidural anesthesia in the latent phase of labour.[13]
- Decision based on abnormal CTG tracings should be abandoned because efficacy of CEFM has not been proven.
- Institutionally developed protocols should be followed strictly by the obstetric team for the management of abnormal FHS pattern.
- Diagnoses of active phase of labor after 5-6 cm dilatation and a time frame in this active phase will significantly decrease the primary C-Section rate.[7]
- Each member of obstetric team should be responsible enough to halt any process that is not in the interest of infant, mother and the institute
- Check list based protocols should be made for administration of $Mgso_4$misoprostol and oxytocin during labor management and should be implemented by each member of obstetric team.

On the other hand we also believe that difficult and traumatic instrumental delivery is not appropriate, when an easy C-section option is available. Therefore, the aim of a good

obstetrician should be to provide good intrapartum care to ensure safe delivery and to send home a healthy mother/baby pair.

In order to avoid litigations one should try to avoid adverse outcomes of labor and delivery.

Local and national peer review committee should be formed to identify the cause of high C-section rate related to substandard care or any malpractice. Such committee should give correct suggestion to the facility for action to rectify the practice of doing unnecessary caesarian deliveries.[8]

The scenario in private sector hospital like RMI is quite different; most of our patients are doctors and employees of our own institute as well as VIPs. So they pressurize the care taker and the consultant In Charge too much for quick interventions, which can be the main reason for such a high C-section rate in the private sector hospital. Patients own will power counts very much for a successful vaginal birth. So proper counseling of the patients and their attendants is a very important factor in decreasing this high rate.

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