EVALUATION OF 'DECISION TO DELIVERY INTERVAL' AND CAUSES OF DELAY IN EMERGENCY CAESAREAN SECTIONS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: To evaluate decision to delivery interval in emergency caesarean sections performed in tertiary care hospital and to evaluate the factors causing delay.

Methodology: This cross sectional observational study was conducted in Department of Obstetrics & Gynaecology, B unit, Lady Reading Hospital from 1st march 2014 till 31st august 2014. All emergency caesarean section category A (requiring delivery within 30 min from decision to delivery) were included and time taken from decision to delivery was noted, in cases where there was delay, the reason was highlighted. Elective caesarean sections and those not requiring urgent caesarean sections were excluded from study. Descriptive statistics were used to analyze the data and results were expressed in percentages.

Results: Total 102 patients were enrolled in this study, in 35.96% (n=41) there was no delay , in 21.05% (n=24) delay was due to non availability of operating table (it was already occupied), delay in arrangement of medicine led to delay in 13.15% (n=15) patients, non-availability of basic investigation (blood group, HBS/HCV) were responsible for delay in 10.52% (n=12) of cases, cross matched blood arrangement was delaying factor in 7% (n=8) of patients, in 1.75% (n=2) of patients delaying in shifting was found .Regarding indications for caesarian section, the commonest indication was fetal distress (n=25, 24.5%) followed by obstructed labour (n=21, 20.5%).

Conclusion: caesarean section within 30 minutes is possible, ensuring medicine availability and increasing the number of operating tables available for surgery will lead to drastic improvement in achieving our goal.

Key Words: Decision- delivery interval, Emergency cesarean delivery

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INTRODUCTION

National Confidential Enquiry into Patient Outcome and Death (NCEPOD), recommends a four-step classification for the urgency of caesarean sections. In this scheme, grade 1 is caesarean in case of immediate threat to woman or fetus life; grade 2 maternal or fetal compromise but no immediate life threat grade; 3 early deliveries required without any threat to life; and grade 4 elective cesarean sections[1]. In the instances of suspected or confirmed acute fetal compromise, baby should be delivered within 30 minutes[2]. Thus the clinicians delivering babies in an emergency are faced with an onerous responsibility[2,3]. Decision to delivery interval (DDI) is defined as the interval in minutes from the date and time of decision to carry out caesarian section to the date and time of delivery of baby[4]. This is an uphill task to achieve in our set up. The major hurdles in this 30 minutes' target of DDI are, increase in patients load which can lead to a long waiting list for surgery; problems in availability of enough number of operation theatres; scarcity of surgical staff in emergency hours including surgeons, anaesthetists, nurses and theatre staff; lack of coordination at all levels; and transportation delay in shifting the patients from labour rooms to operation theatre[2]. Identifying these factors responsible for delay in decision to incision time, would also enable us in setting standards and clinical guidelines to provide optimal care to the patients.

METHODOLOGY

This cross sectional observational study was conducted in Department of Obstetrics and Gynaecology, B unit, Lady Reading Hospital from 1st march 2014 till 31st

august 2014. All emergency caesarean section category A (requiring delivery within 30 min from decision to delivery) were included and time taken from decision to delivery was noted. An interval of more than 15 minutes at any step was considered as delay although the optimal decision to delivery interval is 30 min especially for category I cases. Cause and reason of delay were noted. Elective caesarean sections and those not requiring urgent caesarean sections were excluded from study. Descriptive statistics were used to analyze the data and results were expressed in percentages.

RESULTS

A total 102 patients were enrolled in this study, no stillbirths or maternal deaths were recorded in this study. Table 1 shows causes of delay. In 35.96% (n=41) there was no delay, in 21.05% (n=24) delay was due to non availability of operating table (it was already occupied) , delay in arrangement of medicine led to delay in 13.15% (n=15) patients, non-availability of basic investigation (blood group, HBS/HCV) were responsible for delay in 10.52% (n=12) of cases, delay in cross matched blood arrangement was delaying factor in 7% (n=8) of patients, in 1.75% (n=2) of patients delaying in shifting was found. Regarding indications for caesarian section, the commonest indication was fetal distress (24.5%) followed by obstructed labour (20.5%). Other indications are depicted in table 2.

DISCUSSION

The aim of this study was to assess the decision to delivery interval (DDI) and evaluate the causes of delay in emergency caesarean sections. DDI of 27.4 minutes for crash caesareans (impending fetal death), 42.9 minutes for fetal distress and 71.1 minutes for cases without fetal distress was reported by Mackenzie et al[9]. In our study the DDI was 28min in which no delay was found, matching with this study. Kolas et al and Sayegh et al in separate studies reported mean DDI of 39.5 minutes and 52.4 minutes. The result of our study is an improvement from results obtained in similar studies from Nigeria[4] where only 5.7% of emergency CS were performed with no delay. A study by Gita Radhakrishnan et al[2] had DDI of 122min for category 1 caesarian sections which is in contrast to standard time and in only 1.8 % cases DDI of 30 minutes or less was achieved.

Sayegh et al[11] observed delay due to non availability of operation theatres and that the maximum delay occurred in shifting of patients to the operation theatre. In our study major causes of delay were non availability of operating tables which is accepted as described in other

Table 1: Causes of delay and DDI

S. No	Causes of delay	Number of cases	Percentage	DDI(minutes)
1	No delay	N=41	35.96	28min
2	Non availability of operating table	N=24	21.05	70min
3	Delay in arrangement of medicine	N=15	13.15	102min
4	Non availability of basic investigations(blood group, hepatitis profile)	N=12	10.52	50min
5	Delay in cross matched blood	N=08	7	45min
6	Delay in shifting patient to operation theatre	N=02	1.75	60min
	Total	102	100	

Table 2: Indications of caesarian section

S. No	Indications	Number of c/section	Percentage
1	Fetal distress	25	24.5
2	Obstructed labour	21	20.5
3	Footling breech in labour	06	5.8
4	Placental abruption	10	9.8
5	Placenta previa	8	7.8
6	Cephalopelvic disproportion in labour	08	7.8
7	Previous 2 or more c/section	12	11.7
8	Cord prolapsed	12	11.7

studies from Nigeria in which 80% of the delay was due to busy theatre suits and responsible for longest delay i.e. 70min mean DDI. Another study also showed that 66% patients got delayed due non availability of operation theatres[2].

Time taken in arranging blood for the patients is a factor causing delay in shifting the patient to OT besides non availability of OT[5].

CONCLUSION

Caesarean section within 30 minutes is possible, ensuring medicine availability and increasing the number of operating tables available for surgery will lead to drastic improvement in achieving our goal. This evidence would also enable us in setting standards and clinical guidelines in order to provide good care to our patients. This study can serve as preliminary study to be followed by other large scale studies which can provide the required data to health care authorities for planning appropriate strategies.

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CONTRIBUTORS

SF conceived the idea, planned the study, and drafted the manuscript. SR helped acquisition of data and did statistical analysis. SSH drafted and critically revised the manuscript. All authors contributed significantly to the submitted manuscript.