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Research article *Medical research*

A study to assess neonatal outcomes followed by caesarean section at Orotta National Referral Maternity Hospital, Asmara, Eritrea

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ABSTRACT

Out of the estemated130 million infants born each year worldwide, 4 million die in the first 28 days of life.3/4 of neonatal deaths occur in the first week and more than ¼ occur in the first 24 hours. Neonatal deaths account for 40%of deaths under the age of 5years worldwide. An institutional based Prospective cross sectional descriptive study was used to asses neonatal outcome of mothers delivered by C/S. 115 mothers were selected using convenience sampling technique from November 9, to December 9, 2013. Data were collected using structured questionnaires.

Result

Out of 115 samples common indications for C/S were 19.1% fetal distress and 19.1% previous C/S. out of 119 births 18(15-5 %) had Apgar score of <7 in one minuet and after five minutes14 improved, 4 were<7 and 4 (3.4%) were still birth. Out of 115 live births 14 (11.8%) were admitted to NICU and 2(1.7) were died within 7 days, but one died before admission.

Conclusion

It is evident that fetal distress, previous C/S, prolonged labor, mal presentation, changes in FHR, Emergency C/s, decision to incision time, incision to delivery time and type of anesthesia were the factors which affect the neonatal outcome.

INTRODUCTION

[1] About 25,000 live births, 933(3.7%) still births, 1470 (5.9%) low birth weight and 185 neonatal deaths were reported from all health facilities in 2006 through delivery and inpatient services In Eritrea. Cesarean delivery significantly reduces maternal and perinatal mortality [3]. The World Health Organization considers Cesarean section rates of 5–15% to be the optimal range for targeted provision of this life saving interventions for mother and infant [4]. Various factors have been identified to affect neonatal and maternal out comes during caesarean section. Types of anesthesia, maternal medical condition, decision to delivery interval, uterine incision to delivery time, are some of this factor. [19]

OBJECTIVE

General objective

To assess neonatal outcomes followed by caesarean section.

Specific objectives

1. To assess the demographic data.
2. To assess indication of C/S delivery and compare with neonatal out come.
3. To assess base line characteristics which affect the neonatal outcome
4. To assess the APGAR score of neonates.
5. To assess the admission diagnosis and condition of the baby after 7 days.
6. To find out the association between neonatal out come and demographic variables.
7. To find out the association between neonatal out come and baseline characteristics.
8. To find out the association between neonatal out come and indication for C/S.

Methodology

An institutional based Prospective cross sectional descriptive study was done to asses neonatal outcome of mothers delivered by C/S at Orotta national referral maternity hospital, Asmara. 115 mothers were selected using convenience sampling technique from November 9, to December 9, 2013.Data were collected using structured questionnaires and review of medical cards. . Data analysis was done using SPSS version 20 software.

RESULT AND DISCUSSION

- Majority of them {65(56.6%)} were between the age group 25 to 29 years.
- most of them{98(85.2%)} were attended antenatal clinic 4and above visits
- Most of them {87(75.7%)} were house wife
- Most of them 54 (47.1%) were primi, 47(40.9%) were para 2 to 4 and 14(12.2%) were para 5 and above.
- According to the history of abortion only (15.7%) had abortion and 7% of them
- Had history of still birth
- Most of them {108 (93.9%)} had LSCS and 7(6.1%) of them had classical C/S.

Indications for Caesarean Delivery

N=115

INDICATION FOR C/S		FREQUENCY	PERCENTAGE
Fetal distress		22	19.1
Previous C/S		22	19.1
Mal position		7	6.1
Mal presentation		17	14.8
Post term		1	.9
Cervical dystocia		1	.9
Failed induction	Prom	2	1.7
	Post date	2	1.7
APH	Abruptio	3	2.6
	Previa	3	2.6
Prolonged labor	1st stage	7	6.1
	2nd stage	12	10.4
Cord prolapsed		2	1.7
CPD		13	11.3
Others	BOH	1	.9
	Old primi	2	1.7

Table: 16 show that out of 115 mothers who underwent C/S {22 (19.1%)} were due to fetal distress and previous c/s each, 19(16.5%) were due to prolonged labor, 17(14.8%) were due to malpresentation, 13 (11.3%) were due to CPD, 7(6.1%) mal position 6(5.2%) APH, 4 (3.4%) were due to failed induction, 2(1.7%) were due to cord prolapsed and old primi each,1(0.9%) were due to post term, cervical dystocia and bad obstetrical history

Neonatal outcome

Table: 57

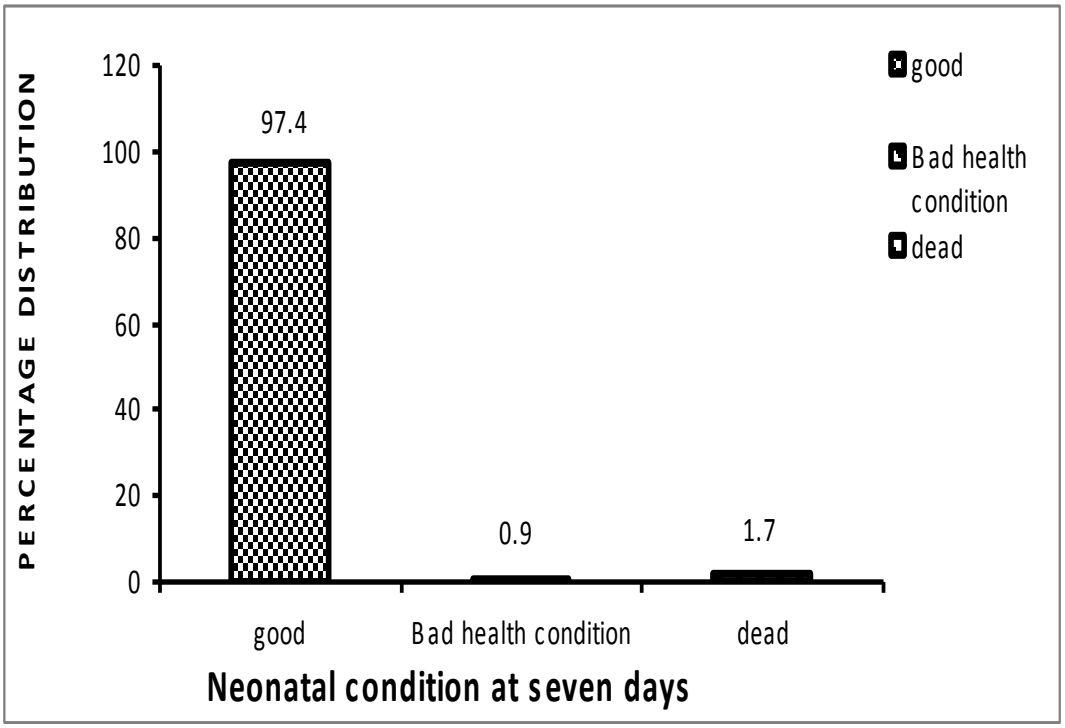
N=119

NEONATAL OUT COME		FREQUENCY	PERCENTAGE
Need resuscitation	yes	18	15.1
	no	101	84.9
Fetal weight	1-1.4kg	2	1.7
	1.5-2.4kg	19	16.0
	2.5-4kg	91	76.5
	>4kg	7	5.9
APGAR score-1 min	0	4	3.4
	1-3	1	0.8
	4-6	17	14.3
	>= 7	97	81.5
APGAR score-5 min	0	4	3.4
	1-3	0	0
	4-6	4	304
	>= 7	111	93.3
Admission to NICU	yes	14	11.8
	no	105	88.2

Table shows that18 (15.1%) neonates were resuscitated. Fetal weight: 91(76.5%) were 2.5 to 4kg, 19 (16%) were 1.5 to 2.4kg, 7(5.9%) were >4kg and 2 (1.7%) were1 to 1.4kg. APGAR score in 1 min: 97(81. 5%) had >=7 and 22 (18.5%) had < 7 out of these 4 (3.4%) were still birth. APGAR score in 5min 111(93.3%) had >=7 and 8 (6.7%) had < 7 out of these 4 (3.4%) were still birth. Admit ion to NICU: out of 115 live births only14 (11.8%) were admitted.

Neonatal condition at seven days

Table: 59 shows that out of 115 live births 112 (97.4%) were in good health condition, 2(1.7%) were died and 1 (0.9%) was in bad health condition



Association of with indication for C/S and neonatal outcome

Table: 2

N=119

	frequency and percentage of APGAR score in one minute				χ^2 Value		Frequency and percentage of APGAR score in five minutes				χ^2 Value		Neonatal condition within 7 days			Still Birth	χ^2 Value	
	<7		>=7				<7		>=7									
	f	%	f	%			f	%	f	%			Good	Bad	Dead			
Fetal distress	4	18.2	18	18.6	S	0.02	1	12.5	21	18.9	NS	0.204	22(19.6%)	0	0	0	NS	1.687
Previous c/s	3	13.6	19	19.6	NS	0.421	1	12.5	21	18.9	NS	0.204	22(19.6%)	0	0	0	NS	.1.687
Mal position	1	4.5	6	6.2	NS	0.087	1	12.5	6	5.4	NS	0.678	6(5.4%)	0	1(25%)	0	NS	2.884
Mal presentation	5	22.7	15	15.2	NS	0.677	1	12.5	19	17.1	NS	0.114	18(16.15)	1(50%)	1(25%)	0	NS	2.013
Post term	0	0	1	1	NS	0.229	0	0	1	0.9	NS	0.73	1(0.9%)	0	0	0	NS	0.063
Cervical dystocia	0	0	1	1	NS	0.229	0	0	1	0.9	NS	0.073	1(0.9%)	0	0	0	NS	0.063
Failed induction PROM	0	0	2	2.1	NS	1.775	0	0	2	1.8	NS	6.192	2(1.8%)	0	0	0	NS	0.259
Post date	1	4.5	1	1	NS	1.775	1	12.5	1	0.9	NS	6.192	2(1.8%)	0	0	1		

APH Abruptio Previa	1	4.5	2	2.1	NS	1.12	1	12.5	2	1.8	NS 3.654	2(1.8%)	0	0	1	NS	8.701
	0	0	3	3.1	NS	1.12	0	0	3	2.7		3(2.7%)	0	0	0		
Prolonged labor 1st stage	1	4.5	6	6.2	NS	4.771	0	0	7	6.3	NS 2.480	7(6.2%)	0	0	0	NS	5.082
2nd stage	5	22.7	7	7.2	NS	4.771	2	25	1	9		10(8.9%)	0	1(50%)	1(25%)		
Cord prolapsed	0	0	3	3.1	NS	0.698	0	0	3	2.7	NS 0.222	3(2.7%)	0	0	0	NS	0.192
CPD	1	4.5	12	12.4	NS	1.129	0	0	13	11.7	NS 1.052	13(11.6%)	0	0	0	NS	0.912
Others	0	0	1	1	NS	0.698	0	0	1	0.9	NS 0.222	0	1	0	0	NS	119.110
BOH Old primi	0	0	2	2.1	NS	0.698	0	0	2	1.8		2	0	0	0		

Note: NS: non-significant S: significant

Table: 2 shows that that there is a significant association with only one indication (fetal distress with 1 min APGAR score) p value 0.02

Association of with their baseline characteristics which may affect neonatal out come

Table: 3

N=119

Frequency and percentage of APGAR score in one minute					χ^2		**Frequency and percentage of APGAR score in five minutes**				χ^2	
	<7		**>=7**				**<7**		**>=7**			
Stages of labor					NS	5.965					NS	3.737
No labor	2	9.1	17	17.5			2	25	17	15.3		
Latent	3	13.6	16	16.5			0	0	19	17.1		
Active 1st stage	9	40.9	50	51.5			3	37.5	56	50.5		
2nd stage	8	36.4	14	14.4			3	37.5	19	17.1		
Status of membrane					NS	0.663					NS	0.647
Intact	8	36.4	44	45.4			4	50	48	43.2		
Clear	9	40.9	36	37.1			2	25	43	38.7		
meconium	5	22.7	17	17.5			2	25	20	18.0		
Fetal heart rate					NS	4.360					NS	0.444
<120	4	18.2	5	5.2			1	12.5	8	7.2		
120-160	16	72.7	83	85.6			6	75	93	83.8		
>160	2	9.1	9	9.3			1	12.5	10	9		
Gestational age					NS	9.08					NS	13.386
<37	3	13.6	1	1			2	25	2	1.8		
37-40	15	68.2	78	80.8			4	50	89	80.2		
40-42	4	18.2	15	15.3			2	25	17	13.3		
>42	0	0	3	2.7			0	0	3	2.7		
Surgeon status												

Senior	1	4.5	9	9.3	NS	0.522	1	12.5	9	8.1	NS	0.187
Resident/GP	21	95.5	88	90.7			7	87.5	102	91.9		
Type of anesthesia					NS	1.603					NS	1.467
General	2	9.1	3	3.1			1	12.5	4	3.6		
spinal	20	90.9	94	96.9			7	87.5	107	96.4		
Type of surgery					NS	2.573					NS	0.439
Emergency	20	90.9	7	75.3			7	87.5	86	77.5		
elective	2	9.1	24	24.7			1	12.5	25	22.5		
Decision to incision					NS	0.186					NS	1.447
0-30	2	9.1	12	12.4			2	25	12	10.8		
>30	20	90.9	85	87.6			6	75	99	89.2		
Incision to delivery												
>90second	22	100	97	100			8	100	111	100		
<=90second	0	0	0	0			0					

Note: NS: non-significant S: Significant

Table: 3 shows that there was no significant association found between baseline characteristic and neonatal outcome

CONCLUSION

This study found that the rate of C/S 12.6% and 6.12% national wide is consistent when compared with sub Saharan Africa. (Reported cesarean delivery rates in Sub-Saharan Africa have ranged from 5% to 21.8%)

The indication of the procedure, the type of anesthesia used and the neonatal outcome was medically acceptable and comparable to international standards. Complications should be diagnosed at an early stage so that we can prevent / prenatal mortality. In this study which revealed that cesarean section related neonatal complications was high but it was not very high when compared with sub Saharan Africa.

Prolonged decision to incision and uterine incision to delivery of the baby should be minimized .Emergency cesarean often too late to reduce prenatal death.

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