Original Article

Outcome of Induction of Labour by Intracervical Catheterization in Eclamptic Patients in A Tertiary Care Centre

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Abstract

Background: Induction of labour is a common obstetric procedure. Both mechanical (e.g., Foley catheters) and pharmacological methods (e.g., prostaglandins) are used for induction of labour in women with an unfavourable cervix. Eclampsia is a serious condition which requires urgent termination of pregnancy. Eclampsia may be associated with moderate as well as significant increases in blood pressure. The blood pressure can return to normal after delivery or may persist for a period of time

Objective: To determine the labour outcome in eclamptic patients by intracervical catheterization.

Material and Methods: This study was undertaken among the patients admitted in the Department of Obstetrics and Gyrtaecology, Dhaka Medical College Hospital during the period from January 2014 to June 2014. Intracervical catheterization were applied in 52 cases. All the pregnant women whose induction done by intracervical catheterization in eclamptia ward in DMCH

Results: This study found mean age of the patients was 28.86±4.26 years ranging from 22 to 35 years. Regarding gestational age 61.5% were 32-35 weeks of gestation followed by 23.1% were 28-31 weeks and another 15.4% were >35 weeks of gestation. Most (66%) of the patients were primigravida. Most of the patients (48.1%) were no antenatal checkup. On analyzing the presentation of the patients 76.9% had severe HTN (diastolic BP >110 mm of Hg). Majority of the patients were conscious and had oedema (90.4%). About 48.1% patients were anaemic and knee Jerks were absent in 56% cases. Maximum (69.2%) were spontaneous vaginal delivery followed by 11.5% were prolonged labour, 7.7% were caesarean section, 5.8% were failed induction and 5.8% were obstructed labour. Maximum 75% had average bleeding, 9.6% had PPH, 5.8% had puerperal sepsis and 5.8% had chorioamnionitis. It was observed that the induction delivery interval was about 80.8 delivered within 20 hours and 19.2% delivered >20 hour. With regards to perinatal outcome this study found 65.4% were live birth. Among 17.3% were found birth asphyxia.

Conclusion: This study shows intracervical catheterization achieved successful induction of labour in women with eclampsia and shorten the time of induction delivery interval.

Introduction

Bangladesh is one of the top listed countries in the world as far as maternal & neonatal morbidity rates are concerned.[1] The incidence of eclampsia is extraordinarily high in Bangadesh-7.9% (not including pre-eclampsia) according to the results of a house to house survey.[2] A study carried out in developed countries has shown that 31.3% cases of eclampsia is not preventable despite of adequate antenatal care & hospital admission.[3]

Eclampsia is associated with elevated maternal & fetal morbidity & mortality. Global estimates of the incidence of eclampsia project about 50,000 maternal deaths due to eclamptic fits each year[4]. It is uncommon in developed countries & 20 times more common in developing countries. In developed countries, eclampsia complicates about 1 in 2000 deliveries.[5] In developing countries, the prevalence of eclampsia varies widely from 1 in 100 to 1 in 1700.[6]

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In recent times, more & more pregnant women around the world have undergone induction of labour. Labour is induced in about 20% of pregnant women in high-income countries, making it one of the most frequently done obstetric interventions.[7] In developing countries like Bangladesh, the rates are generally lower. A variety of techniques for induction of labour have been studied over the decades. The incidence of labour induction for shortening the duration of pregnancy has continued to rise which is a healthy sign.

The procedure of induction of labor by intracervical catheterization is a 30-mL to 50-mL Foley catheter filled with saline is effective in inducing cervical ripening and dilation. The catheter is placed in the uterus, and the balloon is filled. This direct pressure causes stress in the lower uterine segment and probably the local production of prostaglandins and labour pain starts.[8,9]

The use of an extraamniotic catheter, balloon inflated above the level of internal os of cervix, has been advocated as a non pharmacological, mechanical method of cervical ripening before onset of labor. It is suggested that ripening efficacy by catheter balloon is similar, or better, than other methods. This review also suggests that cervical ripening with extraamniotic catheter balloon has the advantages of simplicity, low cost, reversibility, and low risk of uterine hyperstimulation or uterine scar rupture.[10]

Materials and methods

It was a cross sectional observational study carried out Eclampsia unit, Department of Obstetrics and Gynaecology, Dhaka Medical College and Hospital From February 2014 to August 2014. The antepartum eclamptic patients admitted in eclampsia unit of DMCH during the study period with fulfillment of inclusion criteria. Total 52 samples were taken. Data was collected using a structured questionnaire containing all the variables of interest. The questionnaire was finalized following pre-testing. The data were processed in the computer and analyzed by SPSS (Statistical package for social science) for windows version 20.

Results

Table I: Age distribution of patients (n=52)

Age in years	Frequency	Percentage	Mean±SD
21-25	13	25	28.86±4.26
26-30	24	46.2	
31-35	15	28.8	

Table II: Clinical presentation of the patients (n=52)

Presenting features	Frequency	Percentage
Consciousness	12	23.1
Semiconscious	31	59.6
Unconscious	9	17.3
Number of convulsion		
1	11	21.2
2	33	63.5
3	8	15.4
Headache		
Present	48	92.3
Absent	4	7.7
Epigastric pain		
Present	40	76.9
Absent	12	23.1
Blurring of vision		
Present	43	82.7
Absent	9	17.3

Table III: Distribution of the patients by maternal outcome (n=52)

Maternal outcome	Frequency	Percentage
Spontaneous vaginal delivery	36	69.2
Prolonged labour	6	11.5
Obstructed labour	3	5.8
Failed induction	3	5.8
Caesarean section	4	7.7

Table IV: Distribution of the patients by birth out come (n=52)

Birth outcome	Frequency	Percentage
Prematurity	34	65.4
Birth asphyxia	9	17.1
Still birth	11	21.2
IUD	7	13.5

Table V: Distribution of the patients by maternal complication (n=52)

Maternal complication	Frequency	Percentage
PPH	5	9.6
Chorioamnionitis	3	5.8
Puerperal sepsis	5	9.6
None	39	75.0

Table VI: Time of interval between induction & delivery (n=52)

Time interval	Frequency	Percentage
≤20	42	80.8
>20	10	19.2

Table shows 80.8% were ≤20 hours time interval between induction & delivery and 19.2% were >20 hours time interval between induction & delivery.

Table VII: Duration of hospital stay (n=52)

Duration (days)	Frequency	Percentage
1-5	41	78.8
6-10	11	21.2

Discussion

This study found mean age of the patients was 28.86±4.26 years ranging from 22 to 35 years. About half of the patients were in the age group 26-30 years (46.2%) followed by 28.8% were age group 31-35 years and low in the age group 21-25 years (25%). This findings consisted with Okafor which was 28.4 years (range 17-40 years)[11] Sami et al. found 46% in <20 years age group, 6% in 20-30 years, 12% in 30-40 years and 36% in > 40 years.[12] Another study Swain et al. found 5.2% in < 20 years, 1.5% in 21-30 years and 1.6% in > 30 years age group.[13]

This study showed all patients received loading dose $MgSO_4$ after development of convulsion. Sibai[14] identified that magnesium sulfate is the drug of choice for reducing the rate of developing eclampsia in intrapartum and immediately postpartum period. LaRusso[15] suggested that magnesium sulfate may reduce the risk of maternal death during labour and delivery.

In this study shows maximum (69.2%) were spontaneous vaginal delivery followed by 11.5% were prolonged labour, 7.7% were caesarean section, 5.8% were failed induction and 5.8% were obstructed labour. Maximum 75% had no any complication followed by 9.6% had PPH, 9.6% had puerperal sepsis and 5.8% had chorioamnionitis. Almost similar complications were observed Dharmavijaya et al.[16] and Barrilleaux et al.[17]

In the present study it was observed that the induction delivery interval was about 80.8 delivered within 20 hours and 19.2% delivered >20 hour. Similar observations were observed by Dewan et al.[18] Another study by Sciscione et al.[19] showed 20 hours induction delivery interval. Minimum time requirement was 6 hours and 'maximum was 23 hours.

With regards to perinatal outcome this study found 65.4% were live birth. This study has similarities with study conducted by Siddiqui et al.[20] Once the patient developed eclampsia continuation of pregnancy is not recommended. So termination was done irrespective of gestational age.

Conclusion

This study shows intracervical catheterization for labour induction is very effective and shorten the time of induction delivery interval and should be considered for use in clinical practice. The intracervical catheterization catheter could make it particularly useful in resource-limited settings. This study has also shown that the use of intracervical catheterization to induce labour is very effective and would hardly end in failed induction. We feel that using the intracervical catheterization is effective for Bangladeshi women. Therefore we recommended that traction be applied to intracervical catheterization when it is being used for pre-induction cervical ripening so as to reduce the induction-delivery interval.

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