MATERNAL & FETAL OUTCOME OF HYPERTENSIVE DISORDERS OF PREGNANCY- A STUDY OF 100 CASES, IN FMCH, FARIDPUR

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Abstract:

This prospective cross sectional study done at Faridpur Medical College Hospital (FMCH) during October 2005 to September 2006 to detect the maternal and fetal outcome in hypertensive disorders of pregnancy. Incidence of PIH in FMCH was 8.25%. Among 230 patients admitted during the period due to hypertensive disorders of pregnancy consecutive 100 patients fulfilling the inclusion criteria was taken as the study cases. Eclampsia was the most common cause (72%) and 49% of the patient had positive family history of PIH. About half (49%) of the patient were 33-36 years of age group. About complications of the Eclamptic patient 11% had pulmonary oedema, 7% developed CVA, 4% patient developed ARF and one patient developed DIC. Fourty Eight percent patients delivered vaginally and LUCS done in 45% Cases and two patients delivered by vacuum extraction.

About the fetal outcome 27% were healthy, 25% were premature and 14% died at early neonatal period, 15% were still birth and 7% were IUD. Outcome of the baby delivered by LUCS were better than baby delivered vaginally. Ninety five percent (95%) of the patient were alive and five patients died. Of them 3 due to pulmonary oedema and 2 due to CVA.

Key word: *Eclampsia, pregnancy induced hypertension, Pulmonary oedema, CVA etc.*

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Introduction:

Hypertensive disorder of pregnancy is one of the commonest complications of pregnancy and a common cause of fetal and maternal morbidity as well as mortality. World wide[1] pregnancy induced hypertension (PIH) is a complication which usually occur after 20 weeks of pregnancy as a direct result of gravid state [2]. Pregnancy induced hypertension (PIH) may be associated with preeclampsia/ eclampsia or without gross oedema or protenuria that is gestational hypertension[3]. The aetiology of preeclampsia and eclampsia are not clearly known. A functional imbalance between vasodilations and vasoconstrictions play a major role in the pathophysiology of preeclampsia and eclampsia[4]. Vasospasm and related cellular hyperactivity has been suggested as the basic pathophysiologic event in this disease[4] Endothelium related vasodilatation is impaired in patients with essential hypertension. Platelet activation and endothelial dysfunction disease are the major pathologic events of this disease. Some high risk factors leading to pre-eclampsia[4]. These are-

Specially young and elderly primigravida, Poor nutrition, Low level of education, Abnormal weight gain, Rising serum uric acid level, Presence of complicating factors e.g. like – pre-existing hypertension multiple pregnancy, polyhydramnions, diabetes, nephritis etc.

The symptoms of hypertensive disorders are hypertension, oedema, sleep disturbance particularly at night, generalized or occipital headache, visual disturbance, epigastric discomfort, oliguria[4]. On examination- (I) weight gain> 0.5 kg/wk or 2.5 kg/month, (II) Rise in blood pressure- systolic blood pressure> 140 mm of Hg and diastolic blood pressure>90 mm of Hg with proteinuria, (III) Oedema (IV) Growth retardation of fetus[4].

Several approaches in the prevention of pre-eclampsia has been tried, including calcium, magnesium supplementation and low dose aspirin, fish oil supplementation. For severe pre-eclampsia and eclampsia hospitalization is

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required. Treatment of preeclampsia & eclampsia includes general nursing care, control & prevention of convulsions, control of maternal blood pressure, obstetric management.

Materials and Method:

It is a prospective cross sectional study done at Faridpur Medical College Hospital, Faridpur during October 2006 to Sept. 2005.

After admission, diagnosis was made mostly on the basis of history and clinical presentation with minimal laboratory aid. Informed consents were taken from all the study subjects or their relatives.

- Patients Suffering form essential hypertension in pregnancy
- Hypertension in pregnancy due to renal disease
- Pheochromocytoma and
- Thyrotoxicosis are excluded from the study.

Methods:

After admission diagnosis is made mostly on the basis of history clinical presentation and laboratory investigations of urine for albumin, S. Uric acid level and USG for pregnancy profile.

Patients blood pressure was checked in left lateral position at hourly and 6 hourly intervals according to severity and the urine was examined with heat coagulation test usually after admission. Data from individual patients were collected in prescribed data collection form.

Foetal monitoring is made by observing FHS, foetal movement, fundal height, foetal size and volume of amniotic fluid. In severe preeclampsia and Eclampsia magnesium sulphate was used according to the protocol of OGSB for prevention and control of convulsion and for control of hypertension a–methyldopa, nefedipin & hydralagin were used. Termination of pregnancy in eclamptic patient was done by the safest method.

Ethical permission taken from the Ethical committee of FMCH.

Results:

During the study period 2786 patients were admitted in the Gynae department of FMCH, of them 230 were due to hypertensive disorder in pregnancy. So the incidence was 8.25%. Among the 100 study cases 72 (72%) patients were due to eclampsia, of them 60 were antipartum eclampsia, 12% due to gestational hypertension and 13% due to gestational proteinuric hypertesnion (Table-I). Ninety three percent of the patients were house wife and 5% service holder and 2% student, Ninety five percent of the patients were Muslim and only 5% were Hindu. Sixty five percent (65%) of the patients came from lower socioeconomic group (monthly income less than 3000 tk). Fourty Nine percent of the patient had positive family history and 30% not known and 21% negative family history.

Table-I

Case distribution of the patients

	No	Percentage
Gestational hypertension	12	12
Gestational proteinuric hypertension	13	13
Eclampsia	72	72
Antepartum Eclp.	60	83.33%
Intrapartum Eclp	3	4.17%
Postpartum Elcp	9	12.50%

About the complication of the eclampsia patient 11 patient had pulmonary oedema, 7 patients developed CVA, 6 had haematuria, 4 patients had ARF and 1 patient developed DIC (table-2).

Table-II

Complication of Eclamptic Patients (N-72)

	No	%
Pulmonary oedema	11	15.3
CVD	7	9.7
Haematuria	6	8.3
ARF	4	5.6
PPH	3	4.2
Hepatic failure	3	4.2
DIC	1	1.4

Fourty eight patients delivered vaginally and 45 patient delivered by LUCS and two by vacuum extraction (table-III). Among the 95 babies delivered 27 were term healthy, 25 premature, 14 babies died at their early neonatal period, 7 were IUGR, 15 stillborn and 7 IUD (table-IV). Five patients died undelivered. Fetus delivered by LUCS, 24 were healthy term, 8 were premature, 6 died at their early neonatal period and 2 were still birth (table – V). Out come of the fetus delivered by LUCS were better than fetus delivered vaginally. Ninety five percent of the patient were alive and return home and five patient died, of them three due to pulmonary oedema and two due to CVD (Table-VII).

Table-III

Mode of Delivery (N-95)

Mode	No	%
Vaginal delivery	48	50.5
LUCS	45	47.4
Vacuum extraction	2	2.11

Table-IV

Fetal outcome (N-95)

Healthy baby	27	28.4
Premature	25	26.3
Early neonatal death	14	14.7
IUGR	7	7.46
Stillborn	15	15.8
IUD	7	7.4

Table-V

Fetal outcome in patient undergoing caesarean section (N-45)

Outcome	48	Percentage
Healthy term baby	24	53.3
Preterm	8	17.8
IUGR	5	11.1
Early neonatal death	6	13.4
Still birth	2	4.4

Discussion:

Maternal mortality due to hypertensive disorders of pregnancy in the developing countries is higher than the highly industrialized world. The prevalence of PIH was 93.1 per 1000 pregnancies in a population-based study in North Carolina, USA[5].

Hypertensive disorders was 8.25 percent of total obstetric admission in FMCH. Eclampsia is the third major cause of maternal death[6].

Table-VI

Fetal Outcome of patient undergoing vaginal delivery (N-48)

Outcome	No	Percentage
Healthy term baby	20	41.67
Preterm	8	16.66
IUGR	8	16.66
Early neonatal death	10	20.83
Still birth	2	4.17

The study which was done by hossain[7] at Dhaka Medical College Hospital (DMCH) in 1993 showed the incidence to be 7.6 percent.

Table-VII

Maternal Outcome

Outcome	No	Percentage
Alive	95	95%
Died	5	5%
Cause of Death		
Pulmonary oedema	3	60%
CVD	2	40%

In the study of Jesimn[8] at Mymensingh Medical College Hospital (MMCH) in 2000, the incidence was 11.45 percent. In the study of Khan[9] in Bangabandhu Sheikh Mujib Medical University (BSMMU) in 2003, the incidence was 7.1 percent. In the study of N. Nahar in DMCH in 2004 the incidence was 13.77 percent. In the study of captain Sayada Fatema Khatun in CMH Dhaka in 2002 the incidence was 10 percent.

Table-VIII

Highest age incidence of hypertensive disorders in different studies.

Study	Place of Study	Age group (years)	Incidence (%)
Hossain (1993)[11]	DMCH	21-25	39.0
N Nahar (2004)	DMCH	16-20	54.0
Cap. Fatema (2002)	CMH (Dhaka)	21-25	37.75
Present study (Oct. 2005-Sep. 2006)	FMCH	20-24	55.0

Table-IX

Comparison of parity distribution of hypertensive disorders of pregnancy in different studies.

Study	Place of Study	Primi-gravida (%)	Multi-gravida (%)
Akhter (1994)[12]	SSMC & MH	58.0	42.0
N Nahar (2004)	DMCH	70.0	30.0
Cap. Fatema	CMH (Dhaka)	57.5	42.5
Present study (Oct. 2005-Sep. 2006)	FMCH	57.5	42.5

The age range in hypertensive disorder patients in this study was found to be from 15-37 years. The highest incidence (55%) was in the age group 20-24 years. Comparison of incidence of hypertensive disorders with age group found in some other studies are shown in Table-X.

Table-X

Incidence of patients taking antenatal care in difference studies.

Study	Place of Study	Incidence (%)
Hossain (1993)[11]	DMCH	46.0
Akhter (1994)[12]	SSMC & MH	42.0
N Nahar (2004)	DMCH	32.0
Present study (Oct. 2005-Sep. 2006)	FMCH	17.0

In the present study, most of the patients were primigravida (74%) and in Akhter's[10] study, most of the patients were primigravida (58%), N. Nahar study, most of the patients were primigravida (70%), in cap. Fatema study, most of the patients were primigravida (57.5%), reflecting that it is a disease of primigravida.

Most of the patients of this study belonged to lower socioeconomic status. In Hossain[7] and Akhter[10] and N. Nahar studies, it was also shown that majority of the patients came from lower class.

The disease Is related to positive family history of hypertension and also recurrence.

Fetal outcome in pregnancy induced hypertension is markedly worse. In this study, 15.80 percent babies were stillborn, 14.7 percent early neonatal death due to asphyxia, 26.3 percent premature, 7.46 percent intrauterine growth retarded and 28.4 percent were healthy. Comparative results in several studies are shown in Table-XIII.

Table-XI

Comparison of fetal outcome in hypertensive disorder of pregnancy in different studies.

Study	Place of study	Health	IUGR	Pre-mature	Early neonatal death due to asphyxia	Stillborn
Hossain (1993)[7]	DMCH	40	6	18	5	4
Akhter (1994)[10]	SSMC&MH	45	4	15	5	6
Das (1997)[11]	IPGMR	80	4	8	4	4
N. Nahar	DMCH	31.25	8.33	23.95	10.41	21.80
Present Study	FMCH	28.4	7.46	26.3	14.7	15.80

In this study, patients were conservatively treated with rest, sedation, anti-convulsive therapy ($MgSO_4$) and anti-hypertensive drugs in oral/sublingual or inject able form by single agent or more than single agent when indicated.

In this study, Caesarean section was 47.4 percent of which maximum was due to uncontrolled blood pressure and failure of progress of labour and rest for other concomitant indications for Caesarean section. In Akhter's[10] study in SSMC & MH in 1994, Caesarean section was 43 percent. All these patients were treated carefully and all of the cases recovered uneventfully. In this study, there was 5 maternal deaths (3 had pulmonary oedema and 1 had CVD). Which is approximately same to Hossain's[7] study in DMCH in 1993 and Nahar (2004) study but Akhter's[10] study in SSMC & MH in 1994 was 2 percent, but Das's[11] study, there was no maternal mortality.

Conclusions:

(Incidence of PIH in FMCH was 8.25%

Most of the women (83) had no antenatal check-up and 93 percent were housewives and majority were illiterate. Majority of the patients (60%) had antepartum eclampsia (72%). Out of 100 patients, 50.5 patients were delivered vaginally. LUCS were needed in 47.4 percent. Among maternal complications commonest was eclampsia (72%). Pulmonary oedema was most common complications and cause of death eclampsia patients and (3%) Prenatal death was 37.9% and preterm babies were 26.3%. Prenatal out come was better in patients delivered by caesarean section.

Improving the ANC services and raising the awareness among the patients fetal and maternal outcome of the patients with PIH can be improved.

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