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RESEARCH ARTICLE

AN OBSERVATIONAL STUDY OF SEVERE PRE-ECLAMPSIA IN PREGNANCY AT TERTIARY HEALTH CARE CENTER OF CENTRAL INDIA

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Abstract

Introduction: To study the effect of age, parity, mode of delivery and perinatal outcome in pregnant women with severe pre-eclampsia.

Method: The study covers 2 year period, during which 480 patients with severe pre-eclampsia were selected, treated and delivered. The study was focussed on age, parity, mode of delivery and perinatal outcome including birth weight and frequency of stillbirths in severe pre-eclampsia patients.

Result: In this study a high proportion (56.0%) was nulliparous women. Similarly, severe pre-eclampsia was encountered at a high percentage (45.5%) in women at the 20-24 years of their reproductive age, and maximum women with severe pre-eclampsia delivered at 37 weeks or more (80%). Spontaneous vaginal deliveries were less frequent in women with severe pre-eclampsia (34.5%) as compared to cesarean (60.5%). Cesarean section was mostly done due to fetal distress (44.9%). The perinatal outcome with severe pre-eclampsia shows 5.5% of fetal demise, out of which stillbirths (2.5%) and IUD (3%).

Conclusion: In our study we found a high proportion of severe preeclampsia cases occurring among nulliparous women and 20-24 years of age. There is also an increased incidence of **cesarean section** among the severe pre-eclampsia and were mostly due to fetal distress.

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Introduction:-

Pre-eclampsia and eclampsia are important causes of maternal morbidity and mortality for mother and her child, although outcome is commonly good [1]. Preeclampsia and eclampsia probably account for about 50,000 maternal deaths a year [2]. Pre-eclampsia is a pregnancy specific syndrome that occurs after 20 weeks of gestation. It is a multisystem disorder of pregnancy usually related to raised blood pressure and proteinuria and complicates 2-8% of pregnancy [3]. The standards for diagnosis are, raised pressure level of Systolic BP of 140mmHg or higher and Diastolic BP of 90mmHg or higher after 20 weeks of gestation in a women with previously normal blood pressure and proteinuria defined as urinary excretion of 0.3g protein or higher during a 24 hours urine specimen. Pre-eclampsia is accounted severe [4] if systolic BP of 160mmHg or higher and Diastolic BP of 110mmHg or higher on two occasions minimum of 6 hours apart while the patient is at bed rest or with proteinuria of 5g or higher during a 24 hours urine specimen or 3+ or greater on two random urine samples collected a minimum of 4 hours apart or

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with sign, symptoms or laboratory values of severe preeclampsia with elevated BP with one or more of the following criteria:

Oliguria of less than 500 ml urine in 24 hours. Cerebral or visual disturbance Pulmonary oedema Epigastric or right upper quadrant pain. Impaired liver function. Thrombocytopenia. Fetal growth restriction.

Materials And Methods:-

This study “An observational Study of Severe Pre-Eclampsia in Pregnancy” was done in Department of Obstetrics and Gynaecology, Government Medical College Ratlam, Madhya Pradesh, India and covered a period of 1 year from 1st July 2018 to 31st June 2020. During the study period, 480 pregnant women with severe pre-eclampsia were admitted and treated. Pre-eclampsia is said to be severe in patients beyond 20 weeks of pregnancy or during labour having one or more of the following criteria- Systolic BP of 160mmHg or higher and diastolic BP of 110mmHg or higher on two occasions a minimum of 6 hours apart while the patient is at bed rest, proteinuria of 5g or higher in 24 hour urine specimen or 3+ or greater on two random urine samples collected a minimum of 4 hours apart (even if BP is within the mild range), oliguria or less than 500ml urine in 24 hours, cerebral or visual disturbance, including altered consciousness, persistent headache, scotoma or blurred vision, pulmonary oedema, epigastric or right upper quadrant pain or elevated serum liver transaminases without a known cause, impaired liver function, thrombocytopenia, with platelet count $\leq 100,000/\mu\text{l}$, fetal growth restriction, microangiopathic hemolytic anaemia (raised bilirubin $>1.2\text{mg\%}$, LDH $>600\text{IU/L}$, low haptoglobin). A detailed history was taken from the patients and complete examination was done at the time of admission. Investigations done were, Blood grouping, Routine examination of blood, Platelet count, RBS, Blood urea, Serum creatinine, Serum uric acid, LDH, Liver function test, Coagulation studies if platelet count <1 lakh, ECG, Urine albumin by dipstick done. Evaluation of fetal size, weight and well-being and liquor volume with ultrasound was done. The antihypertensive used were alpha methyl dopa and labetalol. Progress of labour was monitored by a partograph recording. Patients were either induced or allowed for spontaneous labour. Neonatal outcomes were assessed. The information collected from the subsequent observations were statistically analysed using Chi-square test and student t test.

Observation Table:-

Table 1:- Age distribution of patients.

AGE IN YEARS	NUMBER OF CASES	PERCENTAGE (%)
19-24	35	7.3
25-29	225	46.8
>29	140	29.2
TOTAL	80	16.7

In this table most of the cases i.e. 46.8% belonged to the age group of 20-24 years. Mean age was 24.68 years \pm (4.678SD), Median-24 years.

Table 2:- Distribution of patients based on parity.

PARITY	NUMBER OF CASES	PERCENTAGE (%)
G1	278	58
G2	96	20
G3	58	12
G4	28	6
G5	9	1.9
G6	7	1.3
G7	4	0.8

In our study, the highest incidence of severe pre-eclampsia was among the primigravidas (58%) and is depicted in [TABLE-2].

Table 3:- Duration of pregnancy.

DURATION OF PREGNANCY (IN WEEKS)	NUMBER OF CASES	PERCENTAGE (%)
25 – 28	5	1
29 – 32	14	3
33- 36	77	16
>37	384	80

TOTAL	480	100
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In this table the gestational age 80% were term gestation being 37 weeks or more. Mean duration of gestation was 38.62 weeks \pm (2.887 SD), Median was 40 weeks of gestation..

Table 4:- Mode of delivery.

MODE OF DELIVERY	NUMBER OF CASES	PERCENTAGE (%)
SPONTANEOUS VAGINAL DELIVERY	168	35
INDUCTION	24	5
LSCS	288	60
TOTAL	480	100

As shown in table spontaneous vaginal deliveries were less frequent in women with severe pre-eclampsia (35%) as compared with caesarean section (60%).

Table 5:- Indication of operative interference.

INDICATION OF OPERATIVE INTERFERENCE	NUMBER OF CASES	PERCENTAGE (%)
Fetal Distress	201	42
Oligohydramnios	58	12
Post CS	43	9
Induction Failure	38	8
Postdated	15	3
IUGR	28	6
Breech	15	3
Others	82	17
TOTAL	480	100

In this table caesarean sections were mostly due to fetal distress (42%). Induction deliveries, with spontaneous labour, amounted to 12% in women with severe pre-eclampsia.

Table 6:- Weight of baby at birth.

WEIGHT OF BABY	NUMBER OF CASES	PERCENTAGE (%)
$\leq 1\text{KG}$	10	2
1.1-2KG	58	12
2.1-3KG	326	68
$> 3\text{KG}$	86	18
TOTAL	480	100

In this table It was observed that, 68% of patients delivered babies with birth weight of 2.1-3kg. Mean birth weight was. 140kg \pm (0.6264 SD), Median-2kg. The minimum birth weight was 700gms and the maximum birth weight was 4.2kg.

Table 7:- Fetal demise.

FETAL DEMISE	NUMBER OF CASES	PERCENTAGE (%)
IUD	15	3
STILL BORN	13	2.7
TOTAL	28	5.7

In this table we found that, out of 480 patients, there were 452 live births and 28(5.7%) fetal demise. Thus out of total perinatal mortality, 3% were IUD before admission and 2.7% were still birth.

Results:-

During the study period of 2 year, 480 pregnant women with severe pre-eclampsia were selected to determine the age, parity, gestational age, mode of delivery and perinatal outcome. As mentioned in [TABLE-1], in our study, most of the cases i.e. 46.8% belonged to the age group of 20-24 years. Mean age was 24.68 years \pm (4.678SD), Median-24years. minimum age was 18 years and maximum age seen was 38 years. In our study, the highest incidence of severe pre-eclampsia was among the primigravidas (58%) and is depicted in [TABLE-2]. Regarding the

gestational age, as shown in [TABLE-3], in our study 80% were term gestation being 37 weeks or more. Mean duration of gestation was 38.62 weeks \pm (2.887 SD), Median was 40 weeks of gestation. Minimum gestation at which severe preeclampsia occurred in our study was 27 weeks and the maximum was 43 weeks. As shown in [TABLE-4] and [TABLE-5], in our study, spontaneous vaginal deliveries were less frequent in women with severe pre-eclampsia (35%) as compared with caesarean section (60%). Caesarean sections were mostly due to fetal distress (42%). Induction deliveries, with spontaneous labour, amounted to 12% in women with severe pre-eclampsia. It was observed that, 68% of patients delivered babies with birth weight of 2.1-3kg. Mean birth weight was. 140kg \pm (0.6264 SD), Median-2kg. The minimum birth weight was 700gms and the maximum birth weight was 4.2kg as shown in [TABLE-6]. In our study we found that, out of 480 patients, there were 452 live births and 28(5.7%) fetal demise. Thus out of total perinatal mortality, 3% were IUD before admission and 2.7% were still birth, as depicted in [TABLE-7].

Discussion:-

In our study the occurrence rates of severe preeclampsia were highest in age group below 24 years. This is comparable to other studies which show the peak incidence of eclampsia in the teenage years and low twenties [4, 5]. The incidence of severe preeclampsia in nulliparous population was 58% in our studies. This is consistent with the high incidence and risk of severe pre-eclampsia in the nulliparous population. In our study 20% of the cases had severe preeclampsia preterm, out of which 16% were between 33-36 weeks. In the study by Seth et al , 47% patients were over 36 weeks gestation and 31.8 % were between 32-36 weeks gestation[6] the disparity in gestational age in our study could be possibly due to late onset of severe pre-eclampsia in our study population. Regarding mode of delivery in our study we found that there was an increased in operative interference in patients with severe pre-eclampsia, which was mainly due to a high incidence of fetal distress. The higher rate of caesarean section was might be with an aim to prevent complications to the fetus as well as the mother.

Conclusion:-

In our study we found a high proportion of severe pre-eclampsia cases occurring among nulliparous women and those at the extreme ends of the reproductive age. There is also an increased incidence of caesarean section among the severe pre-eclampsia and were mostly due to fetal distress.

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