

## FOETAL OUT COME OF ASPIRIN TREATED PATIENTS IN PREGNANCY INDUCED HYPERTENSION.

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### SUMMARY

100 mg of aspirin was given to patients with history of eclampsia/pre-clampsia in previous pregnancy and women with PIH in present pregnancy. The foetal outcome of patients on aspirin and PIH group on anti-hypertensive therapy was compared. In PIH group (19 cases) treated on low dose aspirin mean birth weight was  $2.91 \pm 0.63$  kg while patients of PIH group on antihypertensive therapy had birth weight of  $2.44 + 0.40$  kg. 3 babies had birth weight less than 2.5 kg against 13 babies in PIH group on anti-hypertensive therapy. The caesarean section rate for impending eclampsia was higher in patients of PIH group on anti-hypertensive therapy than in aspirin treated patients.

### INTRODUCTION

In pregnancy induced hypertension (PIH) there is a disturbance in the balance of prostacyclin and thromboxane resulting in decreased foeto-maternal blood flow thereby causing growth retardation. Since aspirin restores the balance of prostacyclin and thromboxane it improves utero placental circulation (McParland and pearce, 1991) and hence foetal outcome is improved in

terms of gestational age at delivery, birth weight and perinatal morbidity (Trudinger et al, 1988). The present study was conducted to find out the role of aspirin on mode of delivery and birth weight in patients with pregnancy induced hypertension.

### MATERIAL AND METHODS

The study was conducted on 90 patients attending ANC, OPD and Indoor department of Obstetrics and Gynaecology and Neonatology, J.N.M.C., A.M.U., from Jan. 93 to April 94.

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*Accepted for Publication on 11.1.96*

Patients were selected as Control group (30 cases) which included healthy normotensive pregnant females without any overt medical illness, and study group (90 cases) which was subdivided as:

a) PIH gp. women on anti-hypertensive therapy in third trimester

b) Low Dose Aspirin (LDA) group which was subdivided on the basis of obstetric history.

(i) PIH group on LDA (19 cases) women with history of eclampsia/pre-eclampsia in previous pregnancy and women with PIH in present pregnancy.

(ii) Intra-uterine growth retardation group. (IUGR group) (4 cases) women with clinical suspicion of IUGR.

(iii) Pre-mature labour pains (PLPP) (7 cases) Women with premature labour pains in present pregnancy.

Platelet count and Platelet adhesiveness was done in all the patients.

In control and PIH group sample was collected in third trimester, while in patients on Aspirin it was done before starting therapy and after stopping therapy.

#### DOSE AND DURATION OF ASPIRIN THERAPY

100 mg of aspirin was started from 14-16 weeks of gestation in patients who had history of PIH in previous pregnancy and in patients who developed PIH in late second trimester it was given when PIH was diagnosed. None of the patient below 14 weeks of gestation was given aspirin therapy. The therapy was stopped 2 weeks before E.D.D.

The patients of PIH were sub-divided as:

(i) Mild PIH : (26 cases) B.P. less than 160/110 Torr with proteinuria <3 gms/L in 24 hours

(ii) Severe PIH : (4 cases) patients with B.P. > 160/110 Torr along with significant proteinuria (>3 gms/L in 24 hours).

The patients to be given aspirin were selected on the following criteria:

a) Patients with H/o eclampsia/pre-eclampsia in previous pregnancy

b) Patients with PIH in present pregnancy

c) Patients with clinical suspicion of IUGR in the present pregnancy.

#### RESULTS

There was a higher caesarean rate in PIH group (43.33%) as compared to LDA group (36.84%) and foetal weight of < 2.5 kg was seen in 13 (43.33%) cases in PIH group as compared to 3 (15.7%) cases in LDA group which is statistically significant. However complications like Retinal detachment and PPH were observed only in LDA patients not in PIH group.

#### DISCUSSION

In our study c/s for impending eclampsia was significantly higher in PIH group than in aspirin treated patients. This study is in harmony with Wallenburg et al (1986) where 7 out of 23 patients in placebo group had c/s against 1 out of 21 in aspirin group. Thus the number of c/s was significantly higher in the placebo group than the aspirin group ( $P < 0.001$ ).

LDA group had improved foetal weight. In OIH group 9 patients (30%) had IUGR. In PIH group treated on LDA only 1 patient



**Table I**  
**Course and outcome of pregnancy in PIH patients**

	PIH (30 cases)	LDA in PIH (19 cases)
1. Week of delivery		
< 37 weeks	01 (3.3%)	02 (10.5%)
> 37 weeks	29 (96.6%)	17 (89.4)
2. Mode of delivery		
- Vaginal	17 (56.66%)	12 (63.15%)
- Caesarean	13 (43.33%)	07 (36.84%)
3. Foetal Wt. (Kg)		
< 2	06 (20%)	02 (10.5%)
2-2.5	07 (23.33%)	01 (15.2%)
2.5-3	14 (46.6%)	06 (31.57%)
3-3.5	03 (10%)	06 (31.57%)
> 3.5	-	04 (21.0%)
4. Maternal death	Nil	Nil
5. Foetal death	Nil	02
6. Complications		
- Impending eclampsia	04 (13.3%)	01 (5.26%)
- Retinal detachment	01 (3.3%)	02 (10.5%)
- PPH	-	02 (10.5%)

Pregnancy outcome was compared in PIH group on antihypertensive therapy and patients on LDA in PIH group (Table I).

**Table 2**  
**Mode of delivery in study group**

Group	Vaginal	C/s	C/s for impending eclampsia.
LDA	18 (60%)	12 (40%)	1 (3.3%)
PIH	17 (56.66%)	13 (43.33%)	4 (13.3%)

In the PIH group C/s rate for impending eclampsia was more than aspirin treated patients.

**Table 3**  
**Mean birth weight in Control and Study group**

Group	Birth Weight (Kg)
1. Normal Pregnancy	27.8 ± 0.25
2. PIH	2.44 ± 0.40* P<0.01
3. Low dose aspirin PIH (19 cases)	2.91 ± 0.63*

The mean birth weight in patients of PIH group treated on LDA was significantly higher (P<0.01) than in PIH patients on antihypertensive therapy.

**Table 4**  
**Perinatal morbidity and mortality in aspirin treated patients**

	no.	%
- Spontaneous abortion	-	-
- Foetal death	nil	nil
- Neonatal death	2	10.5
- Surviving babies	17	-

The 19 cases on LDA had 17 surviving babies, with two neonatal death.

**Table 5**  
**Neonatal death in control and study group**

	Neonatal death	Gest.age at del.	Cause of death
1. Normal pregnancy	nil	-	-
2. PIH gp	nil	-	-
3. Aspirin gp.	2	29 wks	Pre-maturity with necrotising enterocolitis asp. Pneumonia
		29 wks	Prematurity with septicaemia

No neonatal death was noted in normal pregnancy group, neither in PIH gp. while two patients in aspirin group had neonatal death due to pre-maturity and its associated complications as noted above.

had IUGR (5.2%). This study shows that LDA improve foetal weight, where there is IUGR due to umbilical placental insufficiency, by causing vaso-dilation after increasing the levels of prostacyclin (Trudinger et al., 1988). The improved placental perfusion results in improvement of visceral foetal size and higher urine output (Maher et al 1993).

Of the 19 cases of PIH group treated on LDA there were 2 neonatal deaths. Both these patients reported at 29 weeks and 24 weeks of pregnancy and had H/o hypertension in previous pregnancy. Both the patients had premature delivery with baby weight of 1.8 kg and 1.2 kg respectively. In both these cases, if patient would have come in the early second trimester and aspirin was started at 14/16 weeks than perhaps we would have got better results. In our study no congenital defect was noted in surviving babies, who were given aspirin.

### CONCLUSION

- By this study we may conclude that aspirin improves birth weight in cases of utero-placental insufficiency due to hypertension.

- aspirin given in patients of PIH group on anti-hypertensive therapy decreases caesarean section rate for impending eclampsia.

Thus aspirin given in high risk patients significantly improves maternal and foetal outcome.

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