

EFFICACY OF ALLYLESTRENOL TREATMENT OF INTRAUTERINE GROWTH RETARDATION

S.N. TRIPATHY

ABSTRACT

This is a controlled clinical study undertaken in the 1st Unit of the Dept. of O & G, S.C.B. Medical College, Cuttack from May 1988 to Sept. 1990. All the cases were admitted before or at 32 weeks of gestation and alternate cases were allotted for study and control. To the control group of 50, only bed rest and glucose drinks were given and to the other group in addition to this, 20 mg of gestanon (allylestranol) was given till delivery. The mean increase in birth weight and placental weight were 209 & 31 gms respectively. However the result was not statistically significant. ($p > .02$). But when it comes to the total I.U.G.R. & A.G.A. Babies, in the control only one baby was A.G.A. whereas 16 babies were A.G.A. in the study. ($p < .001$). The treatment is much better if the treatment started earlier by 32 weeks. ($p < .01$). There were no congenital anomalies detected as well as no perinatal mortality in both the groups.

INTRODUCTION

Intra uterine growth retardation (I.U.G.R.) results in an increased incidence of perinatal morbidity and mortality. The death rate of I.U.G.R. foetus is eight times as high as that of normal foetus, and intrapartum death rate is seven times as high as that of the normal foetus. In I.U.G.R. foetuses there is a marked increase in the incidence of polycythemia, hypothermia,

hypoglycemia and hypocalcemia. Although I.U.G.R. can be diagnosed by strong clinical suspicion, examinations and its accuracy corroborated by ultrasonography, there is no established method of effective treatment for the disease. So far, treatment consists of rest, administrations of glucose, aminoacid preparations and vitamin E.

Recently few authors have reported that allylestranol (Gestanon, N.V. Organon) being used before for the treatment of threatened premature deliveries and threatened abortions has been used for the treatment of I.U.G.R. This drug

reported to enhance secretion of placental hormones and enzymes which was thought to be due to stimulation of beta receptors. It has also been suggested that the beta adrenergic action of gestanon relaxes the tension of uterine muscles, increases the blood flow to the placenta and enhances the metabolism of the foetus resulting in accelerated foetal growth. It's biotransformation does not reveal the formation to oestrogens and testosterone. Theoretically the drug should be effective on I.U.G.R. in which placental function is thought to be reduced. This study was undertaken to establish or refute the value of gestanon in the treatment of I.U.G.R.

MATERIAL AND METHOD

This study was undertaken in the Dept. of Obst. & Gynae. (1st Unit) of S.C.B. Medical College Cuttack. A total of 100 cases of I.U.G.R. taken into the study and the duration of the study

was from May 1988 to Sept. 1990. The diagnosis of I.U.G.R. was based on serial measurements of fundal height and abdominal girth made by the author herself. All the women included were sure of their last menstrual period and had regular cycles. The clinical findings were corroborated by the ultrasonographical findings of B.P.D., F.L., and amniotic fluid volume. One hundred cases with foetal growth deficit of 4 weeks or more on two consecutive occasions were taken up and alternate case allocated to the study and controlled group. The study group were treated with bed rest and tab. Gestanon (5 mg) 2 tabs twice a day from the date of admission till delivery, along with glucose drinks. The control group were given bed rest and glucose drinks and our observations are as follows :

OBSERVATIONS

The majority belonged to 21 to 25 years age

TABLE I

Shows the age distribution

21-25 years	Control	Study
21-25	32	31
26-30	5	9
31-35	14	10
Total	50	50

TABLE II

Shows parity distribution

Parity	Control	Study
Primi	21	21
1-3	14	14
4+	15	15
Total	50	50

TABLE III

Other Risk Factors

Risk Factors	Control
B.O.H.	19
Previous L.S.C.S.	6
P.I.H.	5
Rh -ve	2
Total	32

TABLE IV

Shows Baby Weight

Weight in grammes	Control	Study
1500-2000	15	13
2000-2500	34	27
2501-3000	1	10
Total	50	50

group and maximum no. of cases were primis, in both the study and control group. (Table No. I & II). In addition to the I.U.G.R. in both control and study group, there were other risk factors like B.O.H. in 19 cases, previous L.S.C.S. in 6 cases, P.I.H. in 5 cases and Rh - ve in 2 cases in control and the similar no. of cases in the study group. Few pts. had more than one additional risk factors. (Table No. III).

The mean birth weight of the babies were 2180+235 gms in control group and 2389+326 gm in study group. (Table No. IV). The mean placental weight were 313 + 19 & 344 + 72 in control & is a definite increase in both the baby weight and placental weight. The findings were not statistically significant. (p > .02)

The relationship between the start of therapy and baby weight, & placental weight is shown in

TABLE V
Shows Placental Weight

Placental Weight	Control	Study
200-250	15	13
251-300	34	22
301-350	1	4
351-400	x	11
Total	50	50
Mean placental wt.	313+19	344+72gms.

t= 1.35 p > .05

TABLE VI
Shows start of therapy and baby weight

Baby weight	32	32-35	35
1500-2000	x	8	5
2001-2500	4	17	6
2501-3000	7	3	x
Total	11	28	11

Table No. VI & VII. The increase in foetal weight is more if the medication starts earlier as early 32 weeks or less than that. When the treatment started in a later gestational age, the increase the weight of the baby or placenta is not that good.

But as regards foetal outcome, (Table No. VIII), 16 cases were appropriate for gestational age in the study group whereas only one case was AGA in the control group. (P <.001) and the foetal outcome is much better when the treatment with gestanon started in an earlier gestational age. All the 11 cases where treatment started before 32 weeks had babies appropriate for their gestational age. Out of the 28 cases where treatment started at 33 to 35 weeks, only 5 had AGA babies and after 35 weeks, none had AGA babies. The earlier the treatment the result

TABLE VII
Start of therapy & Placental Weight

Placental weight	32	32-35	35
201-250	x	7	6
251-300	1	16	5
301-350	1	3	x
351-400	9	2	x
Total	11	28	11

TABLE VIII
Shows Foetal outcome

Foetal	Control	Study
AGA	1	16
IUGR	49	34
Total	50	50

p <.001

TABLE NO. IX

Foetal outcome according to duration of therapy

Foetal outcome	Weeks of gestation when therapy started		
	32-32	33-35	35 +
G A	11	5	X
U G R	X	23	11
Asphyxia	x	4	5

is better as regards foetal outcome. ($p < .001$).

Asphyxiated babies were born in both study and the control group, their no. being 9 & 10 respectively. They were revived immediately. Incidentally there was no foetal loss, no IUD & no congenital anomalies in both the study and the control group in this series.

DISCUSSION

Reports from literature suggest that gestanon may be used beneficially in the treatment of threatened abortion. But the reports are very few as regards its efficacy in cases of I.U.G.R. Out of 30 cases, Koneka et al (1983) had 16 babies appropriate for their gestational age and no perinatal mortality and morbidity. The present study corroborate their findings. The increase in placental weight (37 gm) and foetal weight (250 gms) on average are almost same as the present study.

The effects of gestanon is better if the treatment is started in the early stage, as this drug accumulates in the placenta to maintain its effects and because there is no fear of negative feed back even if the dose gets larger.

Cortes - Prieto et al (1980) have proposed that the effects of gestanon is insufficient in placental dysfunction. However it is seen that gestanon

maintains the functions of the placenta in a normal state by stimulating or activating this organ and also activates a part of the placenta which remains after loss of function through infarctions. The result in the present study is quite good inspite of multiple risk factors with I.U.G.R.

To conclude, the present study shows that, there is improvement in baby weight, placental weight, increase in the number of babies when the mothers are treated with gestanon. The outcome is much better if the treatment started earlier. Whatever may be the result of the drug, it gives a tremendous satisfaction to the mother that, she is being treated actively, the drug is worth giving.

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