

MANAGEMENT OF NON-HORMONAL DEFICIENCY CASES OF ABORTION BY DUVADILAN

by

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Introduction

The factors implicated in the etiology vary from trauma to chromosomal abnormalities. However, a large number of cases defy classification in the stereotyped groups because they do not fit in one definite group. Therefore, there is a tendency to classify all abortions according to the therapeutic management into Hormonal and Non-hormonal deficiency groups.

The management of Non-hormonal deficiency cases has remained empirical except when definite etiological factors like cervical incompetence and congenital malformations of the uterus are present, which are amenable to treatment. In view of the fact that the process of abortion has been likened to miniature labour, it has been considered feasible to direct the therapeutic approach towards suppression of the hypermobile state of the uterus. In order to achieve this purpose various drugs have been tried. The synthesis of Isoxuprin hydrochloride (Duvadilan) has

heralded a new era in this field. (Alvarez, 1950; Alvarez *et al* 1962; Chieri and Maffeo 1962; Karim, 1963) have reported favourable results following the use of Duvadilan in cases of threatened abortions.

Material and Method

The present study was carried out in the Department of Obstetrics and Gynaecology, S.N. Medical College, Agra. A total of 120 cases of threatened abortions were studied. Of these 100 (83.3%) cases were treated with Duvadilan. 20 cases (16.7%) receiving the conventional treatment in the form of IM. Morphia, bed rest, haemostatics and sedatives were taken as control for the purpose of comparison.

After selection of the cases, a thorough clinical history was elicited, followed by general, systemic, speculum and vaginal examinations. Routine haematological investigations were done. In addition, cervical mucus and vaginal smears were assessed for hormones. VDRL test was done whenever syphilis was suspected.

Observation and Discussion

Age

The lowest incidence of abortion was between 31-35 years age and above. The

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highest incidence was between 20-25 years i.e. 35% in the study and 45% in the control group respectively.

Parity

The parity was inversely related to the incidence of abortion. The maximum incidence was in the primigravida and the minimum incidence in the grand multipara, in both the study as well as the control groups.

Socio-economic Status

The maximum incidence of cases were in the low socio-economic status i.e. in 67 cases (55.8%) and 48 cases (40%) were of middle class, while only 5 cases (4.2%) were of high socio-economic status.

Period of Gestation

Out of the 120 patients, 27 in the study and 9 in the control group i.e. 30% were below 12 weeks gestation, while 73 cases and 11 cases in the two groups respectively i.e. 70% were between 12-24 weeks of gestation.

Number of Previous Abortions

In a total of 120 patients, 64.2% (77 patients) were having no history of previous abortions, 26.7% (32 patients) had only one previous abortion, 6.7% (8 patients) had two abortions while 2.5% (3 patients) had more than two abortions.

Dynamics of Abortion

It can be seen from Table I that 22 cases (22%) in the study group aborted even after treatment with Duvadilan, while 11 cases (55%) aborted in the control group.

In the study group 2 cases (2%) aborted within 2 days of initiation of the therapy. Twelve patients (12%) in the study group and 6 (30%) in the control group aborted 2 weeks after initiation of the therapy. Four cases (4%) and 2

TABLE I
Dynamics of Abortion

| Time taken for abortion | Study group | Control group |
|-----------------------------------|-------------|---------------|
| Abortion within 48 hours | 2 (2%) | 0 (0%) |
| Abortion within 2 days to 2 weeks | 4 (4%) | 2 (10%) |
| Abortion after 2 weeks | 12 (12%) | 6 (30%) |
| Missed or incomplete abortion | 4 (4%) | 3 (15%) |
| Total No. of pts. aborted | 22 (22%) | 11 (55%) |

% calculated from 100 cases in the study group and 20 cases in the control group.

patients (10%) of the two groups respectively aborted between 2 days to 2 weeks after initiation of the therapy.

The number of missed or incomplete abortion was 4 cases (4%) and 3 patients (15%) in the two groups respectively.

Previous Obstetrical History

According to the previous obstetrical history the cases of both the study and the control groups were divided into primary and secondary aborters. The number of primary and secondary aborters in the study and the control groups were 64 patients, 36 patients and 13 and 7 patients respectively.

Foetal Wastage

Table II shows the foetal wastage due to unsuccessful deliveries which was 10% in primary aboters in the study group while no foetal wastage was seen in the control group of primary aborters. In the secondary aborters group the foetal wastage was 5.8% in the study and 50% in the control group.

TABLE II
Obstetrical Performance of the Two Groups

| Group | No. of patients | No. of pregnancies continued | No. of delivery | No. of successful delivery | Foetal Wastage |
|----------------------|-----------------|------------------------------|-----------------|----------------------------|----------------|
| TREATED GROUP | | | | | |
| Pr. aborters | 64 | 50 | 30 | 27 | 10% |
| Sec. aborters | 36 | 28 | 17 | 16 | 5.8% |
| Total | 100 | 78 | 47 | 43 | 15.8% |
| CONTROL GROUP | | | | | |
| Pr. aborters | 13 | 5 | 2 | 2 | 0% |
| Sec. aborters | 7 | 4 | 2 | 1 | 50.0% |
| Total | 20 | 9 | 4 | 3 | 50% |

Amount of Bleeding and Incidence of Abortion

It is evident from Table III that out of 36 cases having slight bleeding only 13 patients (36.1%) aborted, while in 3 cases having moderate bleeding 2 patients had abortions (66.7%) in the study group.

In the control group the percentage of abortion was 46.1 in cases having mild bleeding while it was 66.7% in cases having moderate bleeding.

Results of Treatment of the Two Groups

Table IV shows the outcome of treatment in the study and the control groups.

TABLE III
Relationship Between the Amount of Bleeding and the Outcome of Pregnancy

| Group | Amount of bleeding | No. of Patients | Abortions | Pregnancy continued | Foetal Wastage |
|---------------|--------------------|-----------------|-----------|---------------------|----------------|
| Study Group | Mild | 36 | 13 | 23 | 36.1% |
| | Moderate | 3 | 2 | 1 | 66.7% |
| | Severe | 0 | 0 | 0 | 0 |
| Control Group | Mild | 13 | 6 | 7 | 46.1% |
| | Moderate | 6 | 4 | 2 | 66.7% |
| | Severe | 0 | 0 | 0 | 0 |

TABLE IV
Outcome of Treatment of the Two Groups

| Group | Total No. of cases | Fate of pregnancy | | Success Rate in % |
|----------------------|--------------------|-------------------|-------------|-------------------|
| | | Abortion | Preg. cont. | |
| STUDY GROUP | | | | |
| Primary aborters | 64 | 14 | 50 | 78.1% |
| Sec. aborters | 36 | 8 | 28 | 77.7% |
| CONTROL GROUP | | | | |
| Primary aborters | 13 | 8 | 5 | 38.4% |
| Sec. aborters | 7 | 3 | 4 | 57.1% |

Out of 64 cases of primary aborters in the study group, pregnancy continued in 50 patients (78.1%) till viability while the remaining 14 cases aborted. On the other hand, 8 cases out of 36 cases of secondary aborters had abortions while pregnancy continued in 28 patients (77.8%).

In the control group of 13 primary aborters, 8 patients had abortions while 5 patients reached the age of viability and out of 7 cases of secondary aborters, 4 cases had abortions while 3 cases reached the age of viability.

Duvadilan was first synthesized by Moed and van Dijk (1956) and is chemically related to adrenaline and other catecholamines. Though experimental studies have established the use of Duvadilan in inhibiting the muscular activity of the uterus by its influence on the B—adrenergic receptors of the uterine muscles (Lish *et al* 1960) and a papavarine like action on the uterus in higher doses, the drug has not been tried extensively in clinical trials. Very few studies are available regarding the therapeutic efficacy of the drug in threatened abortion.

Bishop and Woutersz, (1961), studied the cessation of uterine contraction in 82% of cases admitted for premature uterine contractions with a period of gestation between 20-30 weeks.

Kishore *et al* (1971), Rohatagi (1971) studied cases between 20-34 weeks of pregnancy suffering from premature uterine contractions and finally concluded that Duvadilan decreases the frequency, amplitude and duration of contraction and also the basal tone of myometrium.

However, for the purpose of comparison with the present study none of the above series can be used for establishing

the efficacy of drug as the duration of pregnancy was between 8-24 weeks.

The success rate in the study group was 88% as compared to 45% in the control group. This in itself shows the efficacy of Duvadilan in suppressing the uterine activity even between 8-24 weeks of pregnancy as demonstrated in the earlier series of premature labour of Kishore *et al* (1971), Rohatagi (1971). However, in the present series the failure rate was also dependant on the amount of bleeding present initially (Table III).

Conclusions

Duvadilan was tried in 100 cases of non-hormonal deficiency cases of threatened abortion and found to be effective in arresting the process of abortion in 88% of cases. However, the end result was dependant on the amount of initial bleeding.

No serious maternal and foetal side effects of the drug were noticed during this study.

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