

THE USE OF ISOXSUPRINE HYDROCHLORIDE IN THE TREATMENT OF THREATENED PREMATURE LABOUR

by

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Prematurity remains a major factor in perinatal mortality and the ability to postpone threatened premature labour is a valuable method of lowering perinatal loss. Various substances have been used to inhibit uterine contractions, but in recent years sympathomimetic drugs have been most often used. Isoxsuprine (Hendricks *et al*, 1961), Orciprenaline (Baillie *et al*, 1970), Ritrodine (Wesselius De Casparis *et al*, 1971) and salbutamol (Liggins and Vaughan 1973) have all been reported to postpone premature labour. The present report concerns the use of Isoxsuprine Hydrochloride (Duvadilan) for this purpose. It acts primarily by activating the beta adrenargic receptors of the muscle cell.

Patients and Methods

There were 120 women in the study. All were treated personally by the author. The diagnosis of premature labour was made on the basis of regular, painful uterine contractions (Bishop and Wouteraz, 1961) with cervical effacement and dilatation between 2 cms. and 4 cms. An additional sign which was frequently present was that the membrane bulged through the cervix during contractions. In none of the cases studied were the membrane ruptured. The age and parity distribution of the cases studied is shown in Table I. The period of gestation at the time of onset of threatened premature labour is shown in Table II.

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TABLE I
Age and Parity

Age	No.	Parity	No.
13-25	62	0	72
26-30	44	1	17
Over 31	14	2 +	31
Total	120		120

TABLE II

Gestation in Weeks	No.
28-30	72
31-33	28
34-37	20

Treatment Regime

Once the diagnosis was made all patients received an intravenous drip of Isoxsuprine Hydrochloride 60 mg. in 540 ml. of 5 per cent dextrose solution. The drip rate varied from 10 drops per minute to 60 drops per minute according to the effect on the contractions. The rate of 60 drops per minute was not exceeded and the maximum dose in 24 hours was 600 mgm. This regime was continued for 72 hours. On the fourth day the drip was discontinued and Isoxsuprine was administered by intramuscular injection, 10 mg. given every four hours. On the fifth day the dose was reduced to 10 mg. every six hours and on the sixth day to 10 mgm. every eight hours. Thereafter Isoxsuprine was given orally every eight hours until the pregnancy reaches 38 weeks.

During the first six days of treatment the patient was kept in bed and thereafter allowed to get up and about but avoiding

excessive activity. The keystone of treatment is that the dose of Isoxsuprine is regulated according to response, and is not reduced unless contractions are completely suppressed.

Results

The Immediate Results are shown in Table III.

TABLE III
Immediate Results

Time taken for contractions to stop	No. of cases
0- 3 hours	84
4- 6 hours	26
6-12 hours	10
Total	120

Eleven cases required a second course of treatment for a recurrence of premature labour.

The late results are shown in Table IV.

TABLE IV
Late Results

Pregnancy continued to 37 Wks.	96
Pregnancy continued to 40 Wks.	4
Pregnancy continued to 42 Wks.	2
Treatment failed and patient delivered before 37 Wks.	18

Of the 120 women treated the babies survived in 102 cases (85 per cent salvage) and in 18 cases (15 per cent) babies died due to prematurity.

Complications of Treatment

Tachycardia, flushing, pruritus, hypotension were all observed and were managed by slowing down the rate of infusion. Constipation was marked in most of the cases and was treated by laxatives. In only 1 case, treatment was discontinued because of severe hypotension. Fetal distress did not occur during treatment

and in all cases where premature labour was prevented the condition of the baby at birth was satisfactory. The birth weight of the surviving babies in every case was 2,500 gm.

Discussion

The present trial is based on clinical observations and the simple dose regime is similarly controlled. The results are considered satisfactory. It is recognised that assessment of the efficacy of treatment of premature labour has its own problems, especially that of distinguishing between true threatened premature labour and 'false' labour. Nevertheless, since the treatment described carries little risk to the mother or the baby the distinction between 'true' or 'false' labour is academic if the incidence of prematurity is reduced. This is especially important since prematurity remains the most important single factor in both perinatal mortality and morbidity. With the increasing belief that the administration of betamethasone for 48 hours prior to premature delivery to prevent "respiratory distress syndrome", the ability to postpone the onset of premature labour for only this short time becomes very important. This limited aim can almost invariably be achieved using the regime described and in the majority of cases the pregnancy proceeds beyond the stage when respiratory distress is likely to occur. More extensive clinical experience of this and other methods of inhibiting uterine contractions is required and an assessment is needed of their value in terms of fetal prognosis and that of the infant who survives. In the meantime the use of this simple regime is recommended as being effective in overcoming the threatened onset of premature labour in the majority of cases.

Summary

The use of Isoxsuprine Hydrochloride in the management of 120 cases of threatened premature labour is described. The onset of Premature labour was postponed sufficiently to ensure the survival of the baby in 85 per cent of the cases. Careful attention to detail is required if the method is to be used successfully but the control is clinical and no sophisticated apparatus is required.

References

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