CLINICAL TRIAL WITH SPARTEINE SULPHATE (UNITOCIN) AS AN OXYTOCIC

by

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Introduction

There is always a necessity of an oxytocic drug in obstetric practice for clinical conditions, like induction of labour, abortion, hypotonic uterine inertia, premature rupture of membranes and missed abortion. The drug must be effective, should have no adverse effect on the mother and the baby, and mode of administration should be easy. Pitocin drip has gained acceptance for efficacy and safety, but there are certain disadvantages with it. The infusion set may be alarming to the patient, she has to be in bed and use of one arm is restricted. In smaller institutions properly sterilised sets may not be available.

Review of Literature

In 1958 Gray and Plentl reviewed the literature on Sparteine and advocated its trial. Jhaveri, Shah and Shah have given chemistry, history and development of the use of the drug and reported 88.4% success with its use. Devi and Mokadam used it in 42 cases with favourable results. Goodno et al., Embrey and Yates have shown that the drug not only enhances intensity and frequency of uterine contractions but, on occasions, may bring about uterine tetany. Richard Marchick reported uterine tetany with a single injection.

Method and Material

A trial was carried out on 63 patients admitted in Zenana Hospital, Jaipur, in my unit. The patients were selected from routine admissions in labour ward, where it was thought that the use of an oxytocic was indicated.

The types of cases are as follows

Group A. Below seven months of pregnancy	12 cases
1. Induction of abortion	4 cases
2. Stimulation in inevitable abortion	8 cases
Group B. From seven months and above	51 cases
1. Hypotonic uterine inertia	16 cases
2. Premature rupture of membranes	14 cases
3. Induction of labour	11 cases
4. Acceleration of normal labour	10 cases

The cases were assigned to inertia group (Group B-1) when there was history of labour pains for more than 24 hours, and to acceleration group (Group B-4) if labour pains had lasted for less than 24 hours before admission.

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In some of the cases of both the groups, other complicating factors were present as follows:

Pre-eclamptic toxaemia	5 cases
Hydramnios	3 „
Accidental haemorrhage	2 „
Hepatic coma	2 „
Sepsis	1 case
Eclampsia	1 case

Indications for Induction:

TABLE 1

Indication	Group "A" induction of abortion	Group "B" induction of labour
Pre-eclamptic toxaemia	1	6
Eclampsia	1	3
Hydramnios	nil	1
Post-maturity	nil	1
Cancer breast	1	nil
Missed abortion	1	nil
Total	4	11

Presentation

Out of the 51 cases (Group B), foetus presented as vertex in 45 and as breech in 6 cases.

Number of Injections

The average number of injections required in various groups varied. The minimum average of 2.9 injections was needed for acceleration of normal labour, and maximum average of 5.25 injections needed for induction of abortion.

Results in cases below 7 months of pregnancy

Induction of abortion: Out of the four cases in this group, in one (6 months) spontaneous complete abortion took place, and in the other (6 months) spontaneous complete abortion took place only after syntocinon drip (2.5 units in 500 ml. 5% glucose in distilled water) was given next day. The other two ($4\frac{1}{2}$ months) did not respond.

Stimulation in inevitable abortion

All the eight cases in this group aborted spontaneously.

Results in cases seven months and above

In hypotonic uterine inertia group 62.5%, acceleration group 40%, induction group 45.5%, and in the premature rupture of membranes group 64.2% patients delivered within 6 hours after the last injection. The response was better if the membranes were absent. Seventeen out of 24 cases (73.9%) delivered within six hours when membranes were absent whereas 11 out of 23 (43.4%) delivered within 6 hours when membranes were intact.

Spontaneous or forceps delivery occurred in 84.3% cases. One required a caesarean section and in three cases syntocinon drip had to be given. Out of the four undelivered cases, in 2, injections were discontinued. The other two cases were given 5 and 4 injections each. Uterine contractions appeared to have started but subsided after some time. Membranes were intact in both the cases. They delivered three weeks later.

Foetal weight

The weights of the 47 births were as follows:

Upto 2 1/2 lbs.	2.9 to 4 lbs.	4.1 to 5.8 lbs.	5.9 to 7 lbs.	above 7 lbs.
6	6	14	13	7

Weight of the baby	Foetal complications	Maternal complications
Still-births:—		
2 lbs.	Anencephalus	Hydramnios
1.4 lbs.	Anencephalus	Hydramnios
2 lbs.	Anencephalus and Spina bifida	Hydramnios and Acidental haemorrhage
1.8 lbs.	Macerated	Nil
2.8 lbs.	Nil	Accidental haemorrhage
4.12 lbs.	Nil	Eclampsia
Neo-natal deaths:—		
4 lbs.	Nil	Toxaemia
2.8 lbs.	Nil	Toxaemia
4.8 lbs.	Congenital abnormality	Hydramnios
2.12 lbs.	Nil	Nil
4.6 lbs.	Breech	Nil
7 lbs.	Foetal distress	Prolonged labour

The above mentioned details show the causes of 6 still-births and 6 neo-natal deaths. None of the above mentioned deaths could be considered to be due to sparteine sulphate.

Maternal and foetal complications during the course of injections

In 2 cases the drug was discontinued due to: 1. foetal heart went up to 160 per minute after first injection in one case, and 2. patient had vomiting, and foetal movements became excessive after second injection in the other case. In the third there was slight bleeding per vaginam after the 4th injection, this sign was not taken heed of and the 5th injection was administered. Patient delivered a living asphyxiated child and there was retro-placental clot.

Maternal Mortality

Two patients in this series died but these deaths cannot be attributed to sparteine sulphate. One was a case of hepatic coma and the second was a case of accidental haemorrhage of toxaemic origin with coagulation defect.

Summary and Conclusion

1. Sparteine sulphate was used in 63 cases out of which 12 were less than 7 months pregnant and 51 were seven months and above.

2. The indications for the use of the drug were induction of abortion or labour, hypotonic uterine inertia, acceleration of normal labour, premature rupture of membranes and inevitable abortion.

3. The average number of injections required ranged between 2.9 to 5.25 in different groups.

4. The success rate was 25% in induction of abortion, 100% in inevitable abortion and 84.3% in other groups, response being better if membranes were absent.

5. Foetal and maternal complications were noticed in three cases, out of which in two the drug was discontinued.

6. No foetal or maternal death could be attributed to the drug used.

7. If given in selected cases under close observation the drug is effective, safe and mode of administration is easy.

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