PROMAZINE HYDROCHLORIDE AND PETHIDINE DURING LABOUR IN PRIMIGRAVIDAE

by

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Labours vary much in the extent to which they cause pain, and women vary much in the extent to which they are in distress through it. Both these factors should be taken into account while considering the problems of pain during parturition. The first labours are more painful than subsequent ones because of their longer duration and due to stretching and dilatation of the soft tissues for the first time. The pains of the first stage, in a woman who is usually hypersensitive, are unbearable. The most distressing time of the labour is the period just before full dilatation of cervix. When the first stage of labour is prolonged, the patient's morale is sometimes undermined which is due to severity of the pain and failure to appreciate any progress towards her delivery. The pains during the second stage are due to powerful uterine contractions and forcible stretching of vulval orifice and perineum. If these are continued for a longer time and unrelieved, they cause emotional disturbances and ultimately fatigue. Both these factors are important in inhibiting uterine action. The relief of pain, therefore, may actually help to shorten the labour and secure natural delivery.

Almost every known analgesic and aneasthetic drug has been tried at one time or another during labour. Ever since 1847, when Sir J. Y. Simpson administered chloroform to Queen Victoria, there has been a growing demand for the relief of pain in child-birth. An ideal drug for this purpose is one which fulfils the following criteria.

(1) Retention of sufficient command of the mental faculties to permit satisfactory response to instructions.

(2) Adequate alleviation of emotional tension and relief of pain.

(3) No interference with normal mechanism of labour.

(4) No incompatibility with accepted aneasthesia or other agents, if required during labour.

(5) No deleterious effect on circulatory, respiratory or central nervous systems of the mother and the newborn.

(6) Ease of administration and rapidity of action.

By now, a number of drugs have been administered with varying results and side-effects. Bromides, chloral hydrate, chloroform, ether, morphia with scopolamine, pethidine,

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nitrous oxide, trichlor-ethelene and conduction anaesthesia, local infiltration, pudendal nerve block, and low spinal are advocated with varied response. The side-effects on foetus and mother by some of the drugs are well known. The advent of tranquillizers gave a new hope to obstetricians for a long awaited agent that will provide the desired neuromuscular relaxation and mental tranquility.

Various compounds in phenothiazine series have reputed potentiating effects on the commonly used hypnotics and analgesics. Promazine hydrochloride is a recent drug from this group. Chemically the molecule of Promazine is identical with that of Chlorpromazine except that a hydrogen atom replaces the chlorine atom on the phenothiazine nucleus. The depression caused by it is particularly on the reticular system of the brain, but patient retains full mental capacities and remains under quasi hypnosis. This drug also depresses vomiting centre.

Kuntze and Sison and Wergyn and Marks administered Promazine hydrochloride during labour and claimed that the drug in combination with pethidine hydrochloride provides a method of superior and safer analgesia and relaxation during parturition. Moreover, mode of administration and minimal side-effects were of particular merit. Mathews in her double blind trials observed that 58.5% of promazine and 36.1% of placebo cases showed marked improvement in pain.

This study was carried out to evaluate clinically the efficacy of the drug in primigravidae when administered intramuscularly along with pethidine hydrochloride.

Material and Methods

Forty primigravidae admitted to the Department of Obstetrics and Gynaecology, Government Medical College, Aurangabad, were subjected to the trial with Promazine hydrochloride and Pethidine. The same number of cases, admitted from 4-4-1963 to 16-6-1964, were administered only pethidine hydrochloride and were taken up for comparison.

Primigravidae with vertex presentation, without any complications like antepartum haemorrhage, cephalo-pelvic disproportion, abnormal presentation of foetus, signs of foetal distress or associated illnesses like asthma, eclampsia, chronic diseases etc., were selected at random for the study.

Promazine hydrochloride 50 mgm. with Pethidine 50 mgm. was administered intramuscularly during labour when cervix was about 2 cms. dilated The patients in the second group were given Pethidine in dose of 100 mgm. intramusularly. The general well being, degree of distress, blood pressure determination, and foetal heart rate were checked prior to the administration of drugs and thereafter at intervals of 15, 30, 45 and 60 minutes. This was measured by the same person during the last hour of labour and at its end. During parturition the mother's response to questions, her confidence while bearing down, degree of tension and apprehension, state of drowsiness and perineal relaxation were noted. The side-effects of the

drug on the mother were looked for. The new-born babies were examined for alertness, heart rate, type and rate of respiration and central cyanosis or any other significant findings.

Based on following criteria, the response to drugs was labelled as excellent, good, average and poor.

Excellent: Patient relaxed, no evidence of pain or discomfort during labour.

Good: Patient experienced some pain or discomfort with contractions prior to the end of second stage.

Average: Patient experienced pain or discomfort for significant part of labour.

Poor: Pain and discomfort throughout the labour with or in between the contractions.

Results

Eighty primigravidae, 40 in each group, were studied with Promazine hydrochloride — Pethidine, and with Pethidine respectively. The number of cases in various age groups in both the series was more or less similar. These cases were between the ages of 15 to 30 years.

Table I shows the number of cases with dilatation of cervix at the time of administration of drugs and the length of labour.

82.5% of the cases with Promazine-Pethidine and 40% of cases of Pethidine group had 2 cms. dilatation of cervix at the time of medication, whereas 10% and 32% of the patients had 4 cms. dilatation in these same groups, respectively. In pethidine series one-fifth of cases had more than 4 cms. dilatation; 69.6% of the patients whom promazine-pethidine were administered at the stage of 2 cms. dilatation of cervix delivered within 24 hours as against 75% of cases with pethidine.

It is seen from Table II that 85% of cases in Promazine-Pethidine series and 50% of the patients with pethidine had an excellent perineal relaxation. Grading of perinieal relaxation was based purely on clinical judgement. It was better in the group of Promazine-Pethidine. Moreover, the cases in Pethidine group, required more surgical interference

TABLE II
Perenial Relaxation with Promazine Pethedine & Pethedine

Perineal Relaxation	Promazine & Pethidine	Pethidine
Excellent ..	34 (85%)	20 (50%)
Good ..	2 (5%)	16 (40%)
Poor ..	4 (10%)	4 (10%)

TABLE I
Cervical Dilatation and Length of Labour

Cervical Dilatation	Promazine and Pethidine				Pethidine			
	4-12 Hrs.	13-24 Hrs.	25-48 Hrs.	Above 48 Hrs.	4-12 Hrs.	13-24 Hrs.	25-48 Hrs.	Above 48 Hrs.
Less than 2 cms. ..	—	2	1	—	—	2	1	—
2 cms.	12	11	8	2	5	7	4	—
4 cms.	1	2	1	—	2	7	4	—
More than 4 cms. ..	—	—	—	—	2	4	2	—

viz., episiotomy or forceps due to less perineal relaxation. (Table III).

TABLE III
Surgical Interference or Perineal Tear

	Promazine & Pethidine	Pethidine
Episiotomies ..	18	24
First degree perineal tear ..	—	4
Second degree perinear tear ..	2	4
Forceps ..	1	2

Blood pressure of mothers was checked at the time of admission, before administration of drug and at an interval of 15, 30, 45 and 60 minutes after the injection. It was also checked one hour before, and half an hour after the labour. Within an hour of administration of Promazine-Pethidine 30% of the cases showed a fall in blood pressure by 10 to 20 mm. of Hg. while 33% had a rise. Patients of Pethidine group did not show any change in blood pressure.

No significant side-effects were observed on the mother in both the groups except for the nasal congestion which was noticed in 7.5% of cases of Promazine-Pethidine.

TABLE IV
Effect of Promazine-Pethidine & Pethidine on the Newborn

	Promazine-Pethidine	Pethidine
Asphyxia neonatorum ..	1	3
Neonatal deaths ..	1	1

In all, 5% of the newborns had asphyxia neonatorum at the time of birth out of which 75% were in Pethidine group. These babies had shallow and irregular respiration. There were no signs of any intracranial injury or any abnormality of heart and lungs. In the group of Promazine-Pethidine one of the asphyxiated babies was premature who died within 10 hours of birth. Out of three cases with cyanosis in Pethidine group, two had asphyxia neonatorum and could be revieved, while the third one died. This shows that probably Promazine along with a small dose of Pethidine does not cause respiratory depression in newborn babies as compared to Pethidine in doses of 100 mgm.

Table V indicates the over-all results as far as mothers are concerned; 82.5% of the cases from Promazine-Pethidine group and 57.5% from Pethidine series had an excellent result while 5% gave poor response in both the series.

TABLE V
The over-all Results in Mothers

	Promazine-Pethidine	Pethidine
Excellent ..	33 (82.5%)	23 (57.5%)
Good ..	5 (12.5%)	14 (35%)
Average ..	NIL	1 (2.5%)
Poor ..	2 (5%)	2 (5%)

Kuntz and Sison had excellent results with Promazine in primigravidae as also multigravidae. Their cases were also given general anaesthesia. Wegryn and Marks reported excellent results in 59% of the cases with Promazine and Pethidine. These cases were also administered spinal anaesthesia. It was observed from our study that, regardless of the anxiety the patient exhibited before medications, they became more quiet and relaxed with Promazine-Pethi-

dine. A supplementation by any form of anaesthesia was not used in these cases.

Comments

In this study the over-all excellent results of 82.5% obtained in the group of Promazine-Pethidine are commendable. Here all the cases were primigravidae and were not administered any gas or spinal anaesthesia. These findings can be compared favourably with those of Kuntz and Sison and Wegryn and Marks, who have reported excellent results of 75 and 55% respectively. Their cases comprised of primigravidae and multigravidae. Moreover, besides Promazine and Pethidine they administered gas or spinal anaesthesia. The results attained in our series may be due to the fact that majority of cases were from middle and lower economic groups who are used to bear pain without much of emotional disturbances. This factor might be lacking in highly emotional cases of those two referred series.

The effects of Promazine-Pethidine and Pethidine on the new-born are also worth considering. When administered during labour in a dose of 100 mgm. Pethidine contributed to asphyxia neonatorum in 7.5 per cent of our cases. One of these babies could not be revived. Here, all other causes leading to asphyxia were ruled out clinically.

We feel that when Promazine is administered along with a small dose of pethidine, latter's analgesic action is potentiated and this combination produces better results during parturition. Considering, the excellent state of tranquility and perineal relaxation obtained in mothers coupled with less of side-effects on the new-born, Promazine is an admirably suitable drug for tranquility during labour.

Summary and Conclusions

(1) Promazine - Pethidine, and Pethidine were tried during labour in two groups, each of forty primigravidae.

(2) Promazine Hydrochloride with reduced dose of Pethidine provides better tranquility, perineal relaxation and minimal side-effects.

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