CHLORPROMAZINE IN LABOUR

by

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Chlorpromazine has been described as a new 'wonder drug' on account of its many diverse actions. It was discovered by Charpenter in France in 1950. In 1952, Delay and Deniker used it in anaesthesia. Subodh Mitra and Menon reported very encouraging results in eclampsia with chlorpromazine in 1955 and 1956. It has been used in labour by a few authors with varying results. The sedative action of chlorpromazine on the central nervous system has often been compared to a 'prefrontal leucotomy'. Clinically it potentiates anaesthetics, analgesics and hypnotics. It is hypotensive, hypothermic and a mild antihistaminetic. It is anti-emetic and is being widely employed in nausea and vomiting due to different causes. It has one of the broadest spectrums of activity as far as the central nervous system is concerned and is being increasingly used in psychiatry and mental diseases. This study was undertaken in conjunction with the anaesthetist in a series of personal cases to evaluate the effects of chlorpromazine in labour. It was felt that the presence of an anaesthetist would be a distinct advantage.

Methods & Material

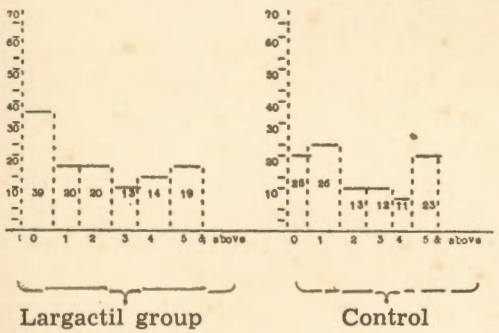
Two hundred and thirty-five unselected private and clinic patients were taken for this study. They were consecutively labelled 'Largactil' and 'Control' and divided into two groups. Patients admitted advanced in labour, for elective ceasarean and premature labours, were excluded. Breech presentations, trial of labour, twins, antepartum haemorrhage, toxaemia of pregnancy and eclampsia were included without selection. The routine adopted was 25 mgms. of largactil followed by an injection of 50 mgms. of pethidine. These were given when labour was considered to be well established. Intramuscular largactil was only given when the patient was restless even after the drug had been administered orally. Both largactil and pethidine could be repeated after four hours if necessary. In the Control Series 100 mgms. of pethidine intramuscularly was given in conjunction with an injection of luminal 2 gr. when patient was having moderate labour pains. Besides these, Mist. pot. brom. et chloral ½ oz. (pot. brom. 30 gr., chloral gr. 20 to 1 oz. of the mixture) was given every 3 hours. Pethidine and luminal were repeated 4 hourly or as required. All the patients were questioned on the third day regarding analgesic and sedative action during labour. The strength of the uterine contractions, duration of labour and

degree of sedation were observed in the two groups. The effect of the drugs on the third stage of labour and blood loss was also recorded. Respiratory depression and narcosis in the new-born also formed a subject for study.

Parity

Regarding maternal age and parity there was not much difference in the two groups except that there was a preponderance of primiparae in the Largactil group.

TABLE I
Table for parity



Dosage and Route of Administration

138 patients were administered largactil, but in 5 patients the pains subsided and labour came to a standstill. Rottger in 1953 was the first to draw attention to this fact. In another 8 patients the labour was too advanced to give any correct picture. Hence these 13 cases were excluded from this study. Of the rest, 99 required only 50 mgms. of pethidine and 25 mgms. of largactil. 9 patients required a second dose and 15 patients had to be given oral and intramuscular administration of largactil. In only 2 cases 75 mgms. of largactil were needed. 27 patients also required Trilene towards the end of the second stage. In the control group, 86 patients required 100 mgms. pethidine with luminal and pot. brom. et chloral ½ oz. every 3 hours. In four patients the dose was 150 mgms. while in 18 cases 200 mgms. had to be given. 3 patients required over 200 mgms. 33 cases required additional Trilene anaesthesia.

Route and Total Dosage

It will be seen from Table II that whereas in the largactil group the majority of the patients required only 50 mgms. of pethidine, the Control group had a minimum of 100 mgms. of the same drug. About 21% in both the groups required larger doses. The patients in the Largactil group were much quieter, more co-operative and required very much smaller quantities of Trilene as compared with the

TABLE II
Route and Total Dosage

	Largactil					Pethidine (Control)				
	25 mgms.	50 mgms.	75 mgms.	100 mgms.	Trilene	100 mgms.	150 mgms.	200 mgms.	300 mgms.	Trilene
Orally	99	9			27	86	4	17	3	33
Oral and Intramuscular		15	2							

controls. In conclusion, the amount of pethidine required appears to be reduced by fifty per cent by the addition of largactil. These findings have been also recorded by Schaffer and Anz & Smith. Norton and his co-workers however noticed that largactil, besides potentiating the sedative action, also caused excitement and restlessness in their patients. This was not seen in the above group.

Duration of Labour

In 5 patients in the Largactil group and in 2 patients in the Control group labour came to a standstill after the first dose of the sedative. These patients had then to be excluded.

increase the strength of the uterine contractions but acts through the hypothalamus. The patients appear relaxed, restful and indifferent to their surroundings and labour pains. David Savage working on chlorpromazine in labour found a high percentage of cases going into uterine inertia and in his group the duration of labour was significantly prolonged. This is possibly because he used much larger doses of largactil starting initially with 75 mgms. of chlorpromazine and 100 mgms. of pethidine. This also perhaps accounts for the increase in the forceps rate. In our patients uterine inertia did not figure prominently.

TABLE III
Total Length of Labour

	0 — 12 hrs.		12 — 24 hrs.		24 — 36 hrs.		36 hrs. & above	
	No. of cases	Per cent	No. of cases	Per cent	No. of cases	Per cent	No. of cases	Per cent
Largactil ..	67	53.5	35	28	13	10.5	10	8
Control ..	40	36.5	43	39	13	11.8	14	12.7

Total Length of Labour

From Table III, largactil appears definitely to shorten the duration of labour. In the Largactil group, in over 53% of the cases labour lasted 12 hours or less while in the Control 36.5% had a labour lasting the same duration. These figures become significant when it is remembered that the number of primiparae in the Largactil group is much larger. This finding is in keeping with that of Karp Lamp and Benson. The impression gathered by studying the above series is that largactil does not appear to specifically

Analgesic and Sedative Action

All the patients were interviewed on the third day with a view to elicit the analgesic and sedative effects of largactil.

It can be noticed from the above that the response to chlorpromazine was definitely better than the Controls. A large percentage were willing for another child in the Largactil group but not so in the Controls. It is also apparent that with the above dosage, though analgesia is fairly satisfactory, there is hardly any amnesia. This is on account of the very small dosage employed. The main

TABLE IV

Questionnaire

Questions	Largactil						Control					
	Tolerable		Intolerable		Don't know		Tolerable		Intolerable		Don't know	
as your labour lerable or in-lerable.	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
	116	92.8	7	5.6	2	1.6	63	57.2	47	42.8	—	
	Clear		Hazy		Don't know		Clear		Hazy		Don't know	
your memory labour clear or zy.	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
	96	77.2	29	22.8	—		100	90.9	10	9.1	—	
	Willing		Unwilling		Doubtful		Willing		Unwilling		Doubtful	
re you willing r another baby.	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
	81	64.8	37	29.6	7	5.6	32	29.1	74	67.2	4	3.6
	Better		Worse		Same		Better		Worse		Same	
as this labour orse than last bour (Multi).	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
	63	73.2	2	23.	21	24.4	26	28.8	24	26.8	40	44.4
	Better		Worse		Don't know		Better		Worse		Don't know	
as your labour tter or worse an you expected rimi).	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
	30	76.9	2	51	7	18	5	21.7	10	43.4	8	37.9

aim of this study was to reduce anxiety, tension and fear. The patients became drowsy, their emotions stabilized and perspective restored. This calming effect of chlorpromazine is of very great therapeutic value, as in our opinion it actually improves the uterine contractions even though indirectly.

Only 29 patients were unable to recollect the events of labour accurately. Most of these cases were those who had received a repeat dose.

Obstetric Abnormalities

There was very little appreciable increase in the forceps rate in the Largactil series. Other obstetric abnormalities also showed no increase.

Savage noticed reduction in the expulsive efforts in primiparae thus increasing forceps application fourfold in the Largactil group. He also had a high incidence of uterine inertia in his cases treated with largactil. This is probably due to the high dosage of largactil employed by him. On the contrary breech extractions, stitching of perineum and low forceps were found to be much smoother and easier in our patients who had received largactil. They also required a much smaller amount of inhalation anaesthesia.

Third Stage of Labour and Blood Loss

The third stage of labour was studied with regard to duration, blood loss and other abnormalities. The results are labelled in Tables VI and VII.

Duration of Third Stage and Blood Loss

There does not seem to be an appreciable difference in the duration of the 3rd stage on comparing the two groups in Table VI. The incidence of post-partum haemorrhage appears to be less in the Largactil group. Four patients required blood transfusion in the Control group. Two patients in the control also had their placentae manually removed. There were no such complications in the Largactil group. It appears largactil has no adverse effect on the third stage of labour. On the other hand, there is a conspicuous absence of complications in the 3rd stage of labour in the Largactil group. This may perhaps be explained by a marked reduction in any serious vomiting in the Largactil group. The patients in the latter series were in a much better general condition and showed no signs of dehydration or exhaustion.

Side Effects and Complications

In the treated group 9 patients had nausea and vomiting and 2 vomited before delivery. The nature of this vomiting was however very mild in these cases. In the control group 18 patients had nausea and vomiting. In 5 patients in the controls vomiting was so severe as to warrant intravenous replacement of fluids. Chlorpromazine definitely reduces the incidence of nausea and vomiting in all stages of labour. The dangers of aspiration pneumonia are very considerable in the unconscious obstetric patient. It would appear that largactil would reduce the incidence of this much dreaded complication.

Other side-effects of largactil were drowsiness, giddiness, pallor, sweating and general flaccidity. These

TABLE V
Obstetric Abnormalities

	Forceps	Breech	Toxaemia	Inertia	A.P.H.	Twins	Eclampsia	Hyperpy-rexia	Heart disease	Diabetes
Largactil ..	9	5	25	2	6	1	1	2	2	1
Control ..	6	3	13	3	1	2	—	—	6	3

TABLE VI
Duration of Third Stage

	Total cases	5 min.		5 - 10 min.		10-20 min.		20 min. and over	
		No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%
Largactil ..	125	100	80	17	15.2	6	4.8	7	5.6
Control ..	110	89	80.9	14	23.7	3	2.7	3	2.7

TABLE VII
Blood Loss and Third Stage Abnormalities

	Normal	Moderate P.P.H.	Severe P.P.H.	Blood trans-fusion	M.R. of placenta
Largactil ..	123	2			
Control ..	96	9	4	4	2

TABLE VIII
Birth weights of Babies

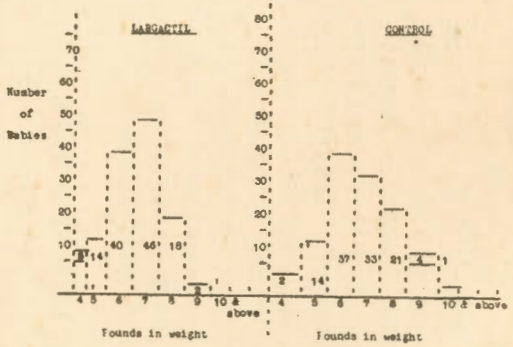


TABLE IX
Resuscitation

	Total cases	Nil	Passive	Active	S. B.	Death neo natal
Largactil	126	113	7	5	1	1
	112	92	14	5	1	4

were, however, not of an alarming nature and were very often transient. No alarming fall of blood pressure was recorded in any of the patients receiving largactil. According to Schaffer, Karp Lamb and Benson the combination of largactil and spinal anaesthesia may be accompanied by a serious fall in blood pressure. As no spinal anaesthetic was used we have no experience. No significant fall of body temperature was noticed in any of the patients.

Effect of Chlorpromazine on the Infant

The babies were studied with regard to weight and condition at birth. The infants were divided into three groups: (1) those requiring no resuscitation; (2) those requiring passive resuscitation, that is aspiration of the throat of mucus and administration of oxygen; (3) those requiring active resuscitation, that is not responding to whiffs of oxygen but requiring intubation and oxygen under positive pressure.

The results are tabulated in Tables VIII and IX.

From the foregoing Tables it would appear that chlorpromazine has no effect on the new-born. Anz and Smith found improvement in neonatal apnoea in babies where the mothers had received chlorpromazine.

In the above series we did not observe any such improvement. There was one still-birth in a case of severe pre-eclamptic toxaemia in the Largactil group where the foetal heart sounds disappeared during labour. The only neo-natal death was in a premature baby weighing 3 lbs. 4 ozs. in the Largactil group. There was also one still-birth in the control series where the foetal heart sounds disappeared during labour. There were 4 neo-natal deaths in the Control group. Two were in the case of twins who were born in white asphyxia and died inspite of all measures. One child had a meningocele and other malformations and the fourth developed convulsions and died on the third day. The foetal wastage recorded above does not appear to be connected in any way with the sedatives administered. The last child had intracranial damage after forceps application and succumbed to that. The improvement noticed by Anz and Smith in their new-borns is possibly explained by a reduction in the dose of the sedatives on account of the potentiating effects of chlorpromazine.

Conclusions

1. Chlorpromazine is a powerful drug and should be used with care. When combined with pethedine it appears to potentiate the analgesic effect of pethedine reducing the dose of the latter to one half or less.
2. When used in small doses it did not appear to prolong the length of labour or cause uterine inertia. When administered in large doses over longer periods labour tends to become prolonged with a reduction in the expulsive effects.
3. No adverse effects on the infant or mother were observed.
4. Obstetric abnormalities did not show an appreciable increase after administration of chlorpromazine.
5. Third stage of labour and blood loss were unaffected.

6. The most encouraging action of chlorpromazine in the obstetric patient is the state of mind it produces. The patient is restful, co-operative and relaxed. She is almost indifferent to the painful uterine contractions and to her surroundings. She is resigned and quite unlike her sister who is tense, full of fears with an imagination overloaded with all the horrors.

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