

INTRATHECAL MORPHINE - WHETHER USEFUL TECHNIQUE

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SUMMARY

Intrathecal morphine for alleviating the agony of labour pain has been a boon, though a few reports state controversy about its side effects.

50 primipara parturients in age group 16-35 years were taken in this study to know the efficacy of procedure & incidence of side effects in the parturient. 90% women were relieved of labour pain with in 20 minutes of intrathecal injection of 1 mg morphine. The degree of pain relief was excellent in 88% and the mean duration of analgesia was 6.63 hours.

There was no significant change in pulse rate respiration and blood pressure of parturient & the foetal heart rate also remained practically unaltered. The subjective sensation of nausea, vomiting, and itching was though noted by approximately 50% parturients but no specific treatment was needed, thus intrathecal morphine for obstetric analgesia may be considered safe & effective technique.

INTRODUCTION

The experience of labour to a woman is a noble punishment and a number of agents from nitrous oxide to Ketamine have been used to alleviate the agony of child birth. The use of intrathecal morphine for obstetric analgesia is a boon and has been reported to be promising, simple, safe and free from side effects (Yaksh et al 1979, Scott et al 1980, Baraka et al 1981,

Lonardot et al 1982,).

There are however some reports of serious side effects with use of such I.T. Morphine i.e. cyanosis, cold sweaty extrimitics, resp. depression etc. (Red. J. 1980).

The present study is therefore attempted to analyse the efficacy of procedure and to identify any untoward effect on the parturient.

MATERIAL AND METHODS

The study was conducted over 50 primipara Parturients in age group of 16-35 years. The

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women with history of drug allergy, anaphylaxis or addiction to narcotic analgesic were excluded from study. 1 mg preservative free morphine was injected intrathecally when cervix was dilated to 2-4 cm and Bishop score was 8-16. The maternal blood pressure, pulse rate, respiratory rate, uterine contraction and foetal heart rate were monitored regularly to identify any untoward effect on Parturient and the assessment of efficacy was done in terms of onset and duration of analgesia and a degree of pain relief.

RESULTS

The onset of analgesia was fairly quick, as 90% parturients were relieved of labour pains within 20 minutes. The mean duration of onset

was 15.86+ 3.63 minutes (Table -I), and the mean duration of analgesia was 6.63 hours (Table -II), The degree of pain relief was excellent in 88% and good in rest 12% (Table -III).

No change in pulse rate of 36% mothers and insignificant change in rest 64% was noted after intrathecal morphine (Table -IV). Similarly 52% women had no change in respiration and blood pressure and the rest had insignificant change (Table - V & VI). The foetal heart rate has also not shown any significant variation after I.T. morphine (Table -VII). Further, there has been no prolongation of labour and 86% deliveries needed no assistance of forceps.

On asking the mother's experience of untowards effects after intrathecal morphine, 50% had no side effect and the rest 50% also had

TABLE I

Onset of relief of labour pains after intrathecal morphine :

Onset of action (minutes)	No. of cases	Percentage
10-15	25	50.00
16-20	20	40.00
21-25	4	8.00
26-30	1	2.00
Total	50	100.00

TABLE II

Duration of Analgesia after intrathecal morphine

Duration of pain relief (in hours)	Parturients No.	%	Mean hours
2-4	2	4.0	3.72
4.1-6	14	28.0	5.42
6.1-8	29	58.0	6.86
8.1-10	5	10.0	9.84
Total	50	100.0	6.63

TABLE III

Degree of Pain Relief

Degree of pain relief	No. of cases	percentage
10-15	25	50.00
16-20	20	40.00
21-25	4	8.00
26-30	1	2.00
Total	50	100.00

TABLE IV

Change in pulse rate observed after injection of I.T. morphine

(n = 50)

Change in pulse rate per minute	Number of Cases		
	Increase	Decrease	No change
(Nil)	-	-	18
1-5	14	15	-
6-10	2	1	-
More than 10	-	-	-
Mean Change	2.87	2.87	

TABLE V
Change in respiratory rate
after intrathecal morphine

Change in respiratory rate / minute	Cases	Increase	Decrease	No change
0 (Nil)	Number	-	-	26
	Percent	-	-	52.0
1-2	Number	9	14	-
	Percent	18.0	28.0	-
3-4	Number	-	1	-
	Percent	-	2.0	-

TABLE VI
Change in blood pressure after intrathecal morphine (N=50) :

Change in blood pressure	Increase	Decrease	No change
No. of cases	6	18	26
Percentage	12.0	36.0	52.0
Mean value	3.33	3.17	-
S.D.	+ 2.42	+2.13	-

TABLE VII
Effect of intrathecal morphine on foetal heart rate :

Change in foetal heart rate	Increase		Decrease		No Change	
	No.	%	No.	%	No.	%
0 (Nil)	-	-	-	-	13	26.0
01-10	15	30.0	21	42.0	-	-
11-20	1	2.0	-	-	-	-
Mean value	3.0	-	2.85	-	-	-

TABLE VIII
The untoward effect of intrathecal morphine on parturient

Side effects	No. of cases	Percentage
Nausea	1	2.00
Nausea and vomiting	4	8.00
Itching	20	40.00
Sweating	-	-
No side effect	25	50.00
Total	50	100.00

insignificant side effects such as itching, nausea and vomitings (Table -VIII).

DISCUSSION

The mean duration of onset of analgesia after intrathecal morphine in our study was 15.63 minutes which is fairly quick as compared to Baraka et al (1981) who have observed mean duration (between onset of painrelief and injection of 1 mg intrathecal morphine) to be, 38.1 min (+ 19.5 min). However Nag et al (1986)

have also observed the mean duration of onset to be 16.0 minutes, which almost coincides with our study. The duration of analgesia outlasted the duration of labour in all cases and the mean duration of analgesia was 6.63 hours.

The prolonged duration of action is due to hydrophilic property of morphine which is responsible for its retention in CNS (Herz et al 1971).

The pain relief was excellent in 88% cases in our study which is also comparable to Nag et al (1986).

No significant change in pulse rate or blood pressure, or respiratory rate of parturients was seen in this study thus negating the C.N.S. depressant action of morphine, when given intrathecally as compared to when given systemically. Nag et al (1986) also had similar findings in respect to the respiratory rate & blood pressure however one patient in their series had significant change of pulse rate. Observations of Scott et al (1980) also correspond to our findings.

The foetal heart rate also had no significant change after intrathecal morphine, which is in accordance with various other authors. (Baraka et al 1981, Bonnardot et al 1982, Sandhu et al

1987). Scott et al 1980, however has observed foetal distress in one out of 12 parturients.

Despite of pain relief, intrathecal morphine didn't cause any prolongation of labour and the other untoward effects were also bare minimum. Itching has been reported by 40% parturients in our study and it is higher than figures of Baraka et al (1980) who have reported itching in only 25%.

It may therefore be concluded that intrathecal morphine is a good modality to relieve excruciating pain of labour and yet produce no significant side effect on parturient or foetus and is therefore a useful technique for application in day to day obstetric practice.

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