PAINLESS CHILD-BIRTH BY THE USE OF INTRAVENOUS ETHYL ALCOHOL AND PITOCIN DRIP

BY

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The search for an ideal method of relieving pain during child-birth is being continued in all countries. Many procedures have been recommended so far, but the majority of them do not satisfy all the safety requirements for the mother and child. According to Keys, the use of ethyl alcohol for analgesia and anaesthesia dates back to 1513 when alcohol fumes were used for anaesthesia. In 1920 Behan used intravenous alcohol for treatment of post-operative pain.

Karp and Sokal used intravenous alcohol successfully in a series of 2000 patients as a routine, and in their report they pointed out how they were able to produce analgesic, anaesthetic, sedative and euphoric effects in the post-operative period. In 1950 Belinkoff was the first to report the use of intravenous alcohol to produce analgesia in labour. In 1951 Chapman confirmed his findings.

As regards the use of pitocin in labour, Blair Bell was the first to use it for post-partum haemorrhage and in his days he considered it a dangerous drug to be used in the first and the second stages of labour. The chief danger was considered to be mainly due to the use of large doses. Hofbauer in 1911 used the drug for the first time in uterine inertia. Since then, Bourne and Burn in 1927 used 2 units of the drug in obstetrically normal primiparae with sluggish pains. Reid in 1946 and Eastman in 1947 used small doses of the drug by the intramuscular route at repeated intervals and found it very effective in properly chosen cases. Recently the intravenous method of administration was tried by Theobald in Great Britain and Hellman in America. The advantage of this mode of administration over others is that the amount of drug in the blood stream is constant at any one time and the dose can be regulated by adjustment of the rate of flow or dilution with consequent elimination of the individual variation in the rate of absorption. Today, there is widespread agreement that oxytocics are contraindicated only in such cases as cephalo-pelvic disproportion, abnormal presentation and multiparity.

In obstetrically normal patients, it can safely be used in the first and second stages of labour with very good results.

The purpose of this paper is to report a series of 76 cases where intravenous alcohol for analgesia in combination with intravenous pitocin, to improve the uterine contractions, was used to hasten labour. As will be seen from the results, the combination has worked satisfactorily to bring about a quick and painless labour in almost all cases and at the same time with complete safety to both mother and child.

Material. Patients who were admitted into the delivery ward of the Government Women and Children Hospital, Egmore, Madras, were chosen for this investigation. The onset of labour was confirmed by abdominal palpation and a vaginal examination. Obstetrically normal primipara or multipara, with a ripe cervix (soft, thin and effaced) admitting a finger or two, together with weak uterine contractions at intervals of 15 to 20 minutes were alone chosen for the study. The solutions used were:—(1) Pitocin 5 units in 500 c.c. of 5% glucose saline and (2) 25 c.c. of ethyl alcohol in 500 c.c. of 5% glucose saline.

Method. The apparatus was set up and the solution was given into the vein of the forearm through a needle, connected to two bottles by means of a Y-tube, thus making it possible to transfer and control the rate of flow of each bottle separately. One of the bottles contained pitocin solution and the other the alcohol solution. Before starting the infusion, the patient was told that her labour was going to be a quick and painless one and that she in her turn has to co-operate and tell us exactly her experience about the pains during the course of the labour. Pitocin was started first at the rate of 20 drops per minute and it was allowed to flow for about 10-15 minutes. A common observation in all these cases was that within 3-5 minutes from the starting of pitocin drip, uterine contractions became well established and the patient also felt the same, but the pitocin was continued to make sure that uterine contractions became stronger and the patient was well in labour. Then this drip was stopped and alcohol drip was let in at a more rapid rate of 40-60 drops per minute. Here again the effect of the drug on the patient was noted in about 10 minutes, but the drug was continued for about 20-30 minutes. Meanwhile the patient got well under the effect of the drug. If at any stage the uterine contractions were found to weaken, pitocin was again started after stopping the alcohol drip. According to the clinical response of the patient the rate of flow of either drug was regulated, till the baby was born.

Report of Cases. 76 cases were altogether taken for the study, both primiparae and multiparae were included. The tabulations below show the exact number taken under each parity.

I	II	III	IV	V	VI	VII	VIII	IX	Total
25	11	12	6	10	3	4	3	2	76

Results. Out of 76 cases chosen, only 72 delivered. The type of delivery is tabulated below.

Type of delivery	I	II	III	IV	V	VI	VII	VIII	IX	Total
Natural	16	11	11	4	8	3	4	1	2	60
Forceps	8	—	1	—	1	—	—	1	—	11
I. P. Version	—	—	—	1	—	—	—	—	—	1
Not delivered	1	—	—	1	1	—	—	1	—	4

Out of 72 deliveries, only 60 were spontaneous, 11 were by forceps, one an internal podalic version and 4 of the series did not respond to the drip.

The analgesic effects are classified under 4 headings.

Excellent	Good	Fair	Poor	Total
47	9	3	3	62

In 6 other cases no analgesic was given as the patients delivered very quickly with intravenous pitocin. In another 4 cases though the analgesic was given patients delivered before it could act. Regarding the time taken by these patients for delivery the maximum time was 7 hours taken by a primipara. The minimum time taken was 8 minutes by a multipara.

The average time taken by primipara and multipara as well as the average quantity of pitocin and alcohol used in these patients are tabulated below:

Parity	Duration of labour	Average quantity of alcohol in c.c.	Average quantity of pitocin in c.c.
Primi ..	2 Hrs. 26 M.	503 c.c.	298 c.c.
Multi ..	1 Hr. 16 M.	336 c.c.	186 c.c.

The effects on the babies in all these cases were very good. None of the babies were asphyxiated and there were no bad effects on the mother as well. The third stage was uneventful in all these cases.

Commentary. Seventy-six obstetrically normal patients were taken for the study. Seventy-two of them had either spontaneous or assisted vaginal deliveries. In all these cases the combined use of pitocin and alcohol showed no antagonistic effects, but on the contrary they seemed to have a synergistic effect. The alcohol did not slow down the effect of pitocin as a rule. It gave good and safe analgesia and at the same time none of the babies had any respiratory distress. Pitocin was found to hasten labour in all cases. The third stage of labour was also found to be normal in all cases. Some of the multiparae had even remarked that their present labour compared with the previous ones was very quick and also painless. Marked individual variations were noted in this series of cases. Some required a small dose of the drug for the required effect, while others consumed

much more of the drug. Hellman and Baltimore in their series of pituitary stimulation say that it is not advisable to try stimulation in greater parity than the fourth. But we in our series have gone on even to the ninth para and have had no disasters. In order to obtain good results, close supervision of the patient to regulate the intravenous drip according to individual response is required. White in an investigation of 30 cases found the duration of labour in primiparae to be 7.3 hours and multiparae to be 4.8 hours. The quantity of alcohol and pitocin required in his series was 744 c.c. and 413 c.c. respectively. He had also given additional medication as, Demerol and Scopolamine.

Summary and Conclusion. A series of 76 cases treated with intravenous pitocin and alcohol are presented.

1. The total number of hours in labour was greatly reduced both in primipara as well as in multipara.

2. There was no mortality or morbidity in any of the mothers or babies. The babies cried immediately after delivery. The multiparous mothers compared their previous deliveries with the present and remarked that it was both quick and painless.

3. The third stage of labour was normal in all the cases. The blood loss was normal, placenta separated as usual and uterus regained its tone quickly.

4. A real attempt was made to evaluate the amount of pain or discomfort these patients experienced. Alcohol relieved the abdominal pain and backache in the majority of cases. But some patients felt either a burning sensation in the vulval region or a feeling of distension of the vulva together with cramp in both thighs during the delivery of the head.

5. Proper and close supervision was found to be necessary in each and every case to prevent dangers.

6. Marked individual variations were noticed in analgesic and oxytocic actions. Some required only a small amount of either the analgesic or oxytocic for the desired effect, while others required much more of the drugs.

References

1. Behan R. J.: Am. J. Surg.; 69, 227, 1945.
2. Belinkoff S.: Am. J. Obs. & Gynec.; 59, 429, 1950.
3. Blair Bell: B.M.J.: 2, 1490, 1909, 1909.
4. Chapman E. R.: Am. J. Obs. & Gynec.; 61, 676, 1951.
5. Eastman: Am. J. Obst. & Gynec.; 53, 432, 1947.
6. Hellman L. M.: Am. J. Obst. & Gynec.; 57, 364, 1949.
7. Hofbauer J.I.: Am. J. Obs. & Gynec.; 14, 137, Aug. 1927.
8. Karp M. and Sokal K.: J.A.M.A.; 146, 21, 1951.
9. Keys T. E.: History of Surgical Anaesthesia; Henry Schuman, Inc., New York, 1945.
10. Reid, D. E.: Am. J. Obs. & Gynec.; 52, 179-734, 1946.
11. Theobald, G. W.: B.M.J.; 2, 123, 1948.
12. White: Am. J. Obst. & Gynec.; 63, 854, 1952.