

EFFECTS OF OXYTOCINS ON THE THIRD STAGE OF LABOUR

by

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Bloodless labour is a very desirable objective to be aimed at, especially in our country where anaemia in the pregnant woman is the rule rather than the exception. In a woman whose haemoglobin is already at a low level, even a small loss of blood post-partum may have serious consequences. Some degree of success in preventing post-partum haemorrhage has already been achieved with the routine use of ergot preparations on the presentation of the anterior shoulder.

Davis (1940), Lister (1950), Martin and Doumelin (1953) advised intravenous injection of ergometrine, but when intravenous injection is not possible, as by midwives, ergometrine is given intramuscularly as advocated by Flew (1947), Kimbell (1954) and Dutton (1958).

Oxytocin has the disadvantage that its duration of action is shorter than that of ergometrine, so that delayed haemorrhage is more likely, but oxytocin acts more quickly than ergometrine by intramuscular injection, Embrey, Barbar and Scudamore (1963) considering the advantages and disadvantages of these two drugs. Syntometrine is a combination of oxytocin and ergometrine.

Plan of the trial

All patients had delivered at U.I.S.E. Maternity Hospital, Kanpur, during 1965 to 1966. The majority were booked patients, mainly primigravidae, a few multiparae.

As the aim was to assess the effect of oxytocin drugs in normal labour, patients who had operative deliveries under general anaesthesia, cases of multiple pregnancy, those with past history of post-partum haemorrhage or retained placenta, those who had received an oxytocin drip, those with foetal death in utero, and cases of antepartum haemorrhage were excluded from trial.

Material and Methods

Five hundred cases were studied in the third stage of labour. Two drugs were used, ergometrine and syntometrine. One hundred cases were kept as controls where no drug was given in the late second stage of labour, but the drug was given at the completion of third stage of labour whenever it was necessary. Two hundred cases were given 0.25 mgm. of ergometrine intravenously during the birth of the anterior shoulder and another two hundred were given syntometrine intramuscularly at the birth of the anterior shoulder. The time of giving the injection was noted by a stop watch. No active measure was taken to

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Received for publication on 24-2-68.

express the placenta but as soon as signs of placental separation were noted gentle cord traction was made to complete the birth of separated placenta. The blood loss was also carefully measured by collecting the blood in a bowl pressed against the buttocks of the patient.

The first group consisted of 72 primiparae and 28 multiparae, second group 124 primiparae and 76 multiparae, while in the third group there were 115 primiparae and 85 multiparae.

Results

Blood loss

The average blood loss in control series who received no drug at the birth of the anterior shoulder is given in Table 1. It varied between 9-11 ozs in 71 cases and in 25 cases it was between 12 to 13 ozs; only 4 cases had more than 13 ozs. The average duration of 3rd stage of labour was

8-10 minutes. In 45 cases ergometrine was given intravenously at the completion of the third stage.

The average blood loss in the second group who received intravenous ergometrine with the birth of the anterior shoulder was minimum, 1-2 ozs; 5 cases had more than 8 ozs.

The average blood loss in the third group who received syntometrine intramuscularly was 2-3 ozs in 195 cases; only 5 cases had more than 10 ozs.

The relation of parity to average blood loss

Table 2 compares the average blood loss in the patient of each trial group subdivided into primigravidae, patients in the second to fifth pregnancies and those in the sixth pregnancy or over. The numbers are too small for statistical analysis, but in each trial group the average loss is much the same irrespective of parity.

TABLE I
Blood Loss in the Third Stage

Group	No. of cases	Average blood loss	Less than 10 ozs.	More than 10 ozs.	More than 13 ozs.
1. Control	100	9-11 ozs. (in 7 cases)	..	25	4
2. Intravenous ergometrine	200	1-2 ozs. (195 cases)	5
3. Intramuscular syntometrine	200	2-3 ozs. (195 cases)	..	5	..

TABLE II
Showing the Average Blood Loss by Parity

	Primigravidae		Gravida 2-5		Gravida 6 & above	
	No.	Average blood loss in ozs.	No.	Average blood loss in ozs.	No.	Average blood loss in ozs.
Control	72	9-11	25	9-12	3	12-14
Ergometrine series	124	1-2	72	1-2	3	2-2½
Syntometrine series	115	2-3	80	2-3	5	3-4

Duration of the third stage

An attempt was made to note the duration of the third stage in the different groups by using a stop watch.

The time was noted from the point of injection of the drug during the delivery of the shoulder or head. Compared with ergometrine, there was a trend in the syntometrine series towards shortening of the third stage. In primigravidae the third stage was completed within 3-4 minutes in 97.8% of the syntometrine cases compared with 95.6% of ergometrine group; the corresponding figures for multigravidae were 98.8% and 96.8%. The differences are not statistically significant.

Retained placenta

In the control group the placenta was retained in 2 cases, (2%). In the group of intravenous ergometrine the placenta was retained in 3 cases (1.5%) necessitating manual removal, while in syntometrine series there was no case of retained placenta.

A comparative study of the oxytocic effect of syntometrine in the third stage of labour has been compared

with those of different authors and is shown in Table III.

Conclusion

It is a well established fact that routine use of an oxytocic with the birth of the baby significantly reduces the incidence of post-partum haemorrhage and also shortens the third stage of labour.

Intravenous ergometrine during the delivery of the anterior shoulder is an accepted procedure where bleeding more than normal is expected. But intravenous injection in untrained hands may become difficult and dangerous while syntometrine, on the other hand, is easy to administer and also has got the dual effect of rapid action with sustained effect.

There is no significant increase in the incidence of contraction ring dystocia or retention of placenta.

Syntometrine should be the drug of choice for uncomplicated, safe, short third stage of labour.

Summary

1. Third stage of labour was studied in 500 cases as regards dura-

TABLE III

Comparative results of syntometrine in the present series with those of others:

Authors	Total No.	Average duration	Post-partum haemorrhage	Retained placenta	Average blood loss
Mc.Grath & Brown 1962	80	10 min.	5.0%	5.0%
Embrey, Barbar & Scudamore 1963	590	34.7% more than 10 min.	2.9%	1.5%
Chukudebelu Marshall & Chalmers 1963	500	5.7 min.	4.6%	3.4%	6.92 ozs.
John Kemp 1963	100	7.8 + 1.2 min.	2.0%	Nil	6.0 + 0.8 ozs.
Appelberg G. 1964	271	10 min.	x	6 cases
Han Ratty T. D.	106	10 min.	4.7%	2.8%
Present series 1965-1966	200	3-4 min.	x	x	2-3 ozs.

tion of third stage, the blood loss, the incidence of retained placenta and post-partum haemorrhage.

2. Comparison was made with a control group where no oxytocic drug was given in the beginning but it was administered when bleeding was more than usual, and also with intravenous ergometrine and intramuscular syntometrine in 200 cases respectively.

References

1. Appelberg, G.: Svenska Lak Tidn 61: 3827, 1964.
2. Chukudebelu, W. O., Marshall, A. T. and Chalmers, J. A.: Brit. Med. J. 1: 1390, 1963.
3. Davis, M. E.: Am. J. Obst. & Gynec. 46: 154, 1940.
4. Dutton, W. A. W.: J. Obst. & Gynec. Brit. Emp. 65: 315, 1958.
5. Embrey, M. P., Barbar, D. T. C. and Scudamore, J. H.: Brit. Med. J. 1: 1387, 1963.
6. Hanratty, T. D.: Med. Abstr. and Ther. Med. 2: 3, 1964.
7. Kemp. John: Brit. Med. J. 1: 1391, 1963.
8. Kimbell: Brit. Med. J. 2: 130, 1954.
9. Lister, U. M.: J. Obst. & Gynec. Brit. Emp. 57: 210, 1950.
10. Martin, J. D. and Dumoulin, J. G.: Brit. Med. J. 1: 643, 1953.
11. McGrath, J. and Brown, A. D. H.: Brit. Med. J. 2: 524, 1962.