

Active Management of Third Stage of Labour by Oxytocin Saline Instillation in the Umbilical Vein

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Summary: Injection methergin is used routinely at the time of delivery of head to facilitate third stage of labour. Uterine stimulants like oxytocin can be used to facilitate the separation of placenta and for curtailing the blood loss by providing efficient uterine contractility. This study included 100 cases of normal delivery out of which 50 cases (study group) were treated with instillation of 5 units of oxytocin in 10 ml normal saline into the umbilical vein immediately after delivery of the baby and 50 cases (control group) were treated with 0.2 mg of methergin IV after delivery of the head. In the study group, the mean injection-placental expulsion time (4.23 ± 3.29 min) was less than that in control group (8.23 ± 3.29 min) ($p > 0.05$). Average blood loss (127.08 ml) in study group was less than that in control group (256.35 ± 108.67 ml) ($p < 0.001$). Retained placenta and PPH occurred less often than in control group.

The method has been found to be simple, safe, effective and non-invasive.

Introduction :

Third stage of labour is always a time of anxiety. "It's antepartum haemorrhage which weakens and post partum haemorrhage that kills", is a true aphorism. Following the expulsion of placenta begins what has been rightly called the most dangerous 5 minutes of pregnancy. PPH is so deadly because it is so insidious. Active management of 3rd stage now has become the rule, usually this is done by giving methergin (0.2 mg IV) at the birth of the head or anterior shoulder to facilitate early separation and delivery of the placenta.

Neri et al (1996) had introduced a new method of giving oxytocin 5 units into the umbilical vein to enhance separation of placenta. The method has previously been tried by Golan et al (1983). Chestnut and Lori (1987) for treating retained placenta. A prospective controlled study was taken up to compare these two methods.

Material and Methods

This study was conducted in the department of Obst. & Gynaecology, M.L.B. Medical College, Hospital, Jhansi. The number of cases studied were 100. They all had normal delivery of which 50 were in study group and 50 in the control group. The two groups matched in age, maximum number being between 18-25 years in both study (62%) and in control (66%) groups. The cases also matched in parity in both the groups. In control group 5 units of oxytocin diluted with 10 ml normal saline were injected in the umbilical vein just after the delivery of the baby and signs of placental separation were observed. The duration of third stage was noted and the total blood loss was measured by the collection of the blood in kidney tray kept close to the vulva of the patient after the delivery. If the placenta was not delivered by 5 minutes, a second injection of oxytocin was repeated. Cases in control group received 0.2 mg methergin IV after delivery of the head.

Duration of Third Stage

Duration of third stage is compared in Table 1.

Table 1 :

Showing the duration of third stage in study and control group.

Group	Duration (min)
Control group	8.23±4.28
Study group	4.23±3.29

't' = 8.16 'p' <0.001

Difference between control and study groups was statistically highly significant.

Blood Loss

The amount of blood loss during third stage in the two groups of cases is given in Table 2.

Table 2

Showing the blood loss in both the groups.

Groups	Blood loss (ml)
Control group	256.35 ± 108.67
Study group	127.08 ± 81.49

't' = 8.81 'p' <0.001

The difference was highly significant statistically.

Postpartum Complications

Incidence of PPH and retained placenta in study group was lower than that in control group.

Out of total 5 cases of retained placenta in 4 cases retention occurred after administration of I/V methyl ergometrine after delivery of head. In only one case did

retention occur after administration of intraumbilical oxytocin saline. Of the 4 cases of retained placenta after I/V methylergometrine, 3 expelled the placenta after being given oxytocin saline injection in the umbilical vein, while in the 4th case, manual removal had to be done. In the single case of retained placenta after intraumbilical oxytocin saline injection, manual removal was done.

Discussion

Methergin is given at the time of delivery of the head to facilitate third stage of labour. The ergonovine injection, in rare occasion, may produce considerable hypertension and it is not suitable for the cardiac patients. By using oxytocin instillation into the umbilical vein, the separation of the placenta is facilitated easily with the minimum amount of blood loss. The use of oxytocin instillation is not associated with such risk like hypertension and abnormal uterine activity. Oxytocin injection into the umbilical vein reaches the placental bed in higher concentration. This stimulates the contraction of the uterine muscle as a result of which the placenta separates and is delivered (Golan, et al 1983).

The present prospective controlled study was carried out to compare the duration, blood loss and complications of third stage of labour between usual method of prophylactic methergin and giving intraumbilical oxytocin 5 units in 10 ml of normal saline after delivery of baby.

With intraumbilical vein injection, the mean injection and placental expulsion interval was found to be 3.3 min by Neri et al (1996) and 1.77 min by Jain et al (1986). In the present study it was 4.23±3.29 min. In the present method placental separation occurred early because the method delivers large amount of oxytocin at the placental site (Golan, et al 1983).

In the study group, blood loss was 127.08±81.49 ml as compared to 256.33 ± 108.67 ml in the control group. Difference was highly significant statistically. (p < 0.001)

The incidence of retained placenta and PPH in the study group was only 2% and incidence of manual removal was significantly reduced. Similarly PPH was less (2%).

Conclusion

Oxytocin instillation in the umbilical vein, during management of third stage of labour may be used safely and successfully.

References

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