

FOETAL OUTCOME WITH ACTIVE MANAGEMENT OF LABOUR — 1ST & 2ND STAGES (A PROSPECTIVE STUDY OF 150 CASES)

ALKA GUPTA • J.A. LOPEZ • C.N. PURANDARE • KAMAL K. DESHMUKH

SUMMARY

Active management of 1st & 2nd stages of labour was prospectively conducted on 150 primigravidas in labour. Mean duration of labour was less than 6 hours and incidence of instrumental vaginal deliveries and caesarean section rate was kept at a minimum. Perinatal outcome was good as evidenced by low perinatal mortality, and any evidence of residual brain damage or birth trauma.

Introduction

Until recent times, the process of labour was largely accepted as one which is subject to wide natural variation and largely outside medical control.

O'Driscoll (1977) at the National Maternity Hospital, revolutionised the management of labour by adopting a concept leading to what is today described as the "Active management of labour" - a modality wherein labour is considered as an intensive care situation and active personal involvement of the obstetrician directed towards its acceleration, the mother and baby being closely monitored during

Department of Obstetrics & Gynaecology, J. J. Hospital & Grant Medical College, Bombay.

its entire process, yielding dramatic results. No labour exceeds a period of 12 hours, maternal morbidity has been kept well under control, need for instrumental deliveries not enhanced and perinatal outcome favourably improved.

Currently stress is laid on the hastening of cervical dilatation and the liberal use of oxytocics, embodying the idea that "Propulsion is better than traction".

Within the general trend towards the policy of active management of labour two lines of development are considered:-

1. Selective augmentation of labour.
2. Planned obstetrics or induction of labour.

Materials and Methods

Our department of obstetrics and gynaecology, G.M.C. conducted a prospective study of 150 full-term, booked, normal primigravidas without CPD in spontaneous labour with vertex presentation between the period of Feb. 85 to Jan. 86, wherein patients were divided in 3 groups of 50 patients each. 1st group was kept as control, 2nd group studied with ARM at 3 cm, and 3rd group was studied with oxytocin administration following ARM. The dose and rate of pitocin infusion was limited by progress of labour & foetal distress. The total dose of pitocin did not exceed 5 units in any patient. Escalating doses of oxytocin were used. Initial drip rate was 5 mu/min. The control patients were allowed to progress in labour until spontaneous rupture of membranes occurred in late 1st stage or in 2nd stage of labour. All patients were closely monitored and the progress of labour was graphically recorded on partogram. Duration of labour was estimated from the time patient was admitted in labour till the birth of the baby. In all cases FHR was monitored clinically and by sonicaid before a contraction and immediately after the contraction passed off. The possible adverse effects of active management on the foetus were measured by examining the perinatal mortality and morbidity.

Observations

Duration of labour was reduced in both the ARM and pitocin group as compared to the control group. 60% of the patients in pitocin group delivered within 6 hours as compared to 40% patients in the control group. And no patient in the pitocin group went beyond 12 hours in labour.

Table 2 below shows that the incidence of instrumental deliveries was greatest in the control group being 18%. 3 cases were due to foetal distress as detected by the presence of meconium and FHR changes. Incidence of LSCS was highest in the control group followed by ARM group and least in pitocin group. And main indication being foetal distress. Pitocin did not enhance the rate of LSCS. Only 1 case in control group required forceps delivery due to maternal distress wherein labour lasted for more than 12 hours. Prolonged labour could have been the contributory factor in this patient.

Mode of Delivery

One infant in control group expired due to foetal distress giving an incidence of 0.67% as compared to 0.1% in Dublin series and there were no neonatal deaths in our series as compared to 0.06% in Dublin series.

DURATION OF LABOUR

| Hours | Controls % | ARM % | Pitocin % | Dublin Series % |
|--------|---------------|----------|--------------|--------------------|
| 0 - 6 | 40 | 52 | 60 | 76 |
| 6 - 12 | 50 | 40 | 40 | 32 |
| 12 | 10 | 8 | — | 2 |

MODE OF DELIVERY

| Delivery | Controls | | ARM | | Pitocin | | Dublin Series (O'Driscoll) |
|--------------|----------|----|-----|----|---------|----|-------------------------------|
| | No. | % | No. | % | No. | % | |
| Vaginal | 37 | 74 | 43 | 86 | 44 | 88 | 89.5 |
| Instrumental | 9 | 18 | 4 | 8 | 4 | 8 | 6.3 |
| L.S.C.S | 4 | 8 | 3 | 6 | 2 | 4 | 4.2 (O'Driscoll) |

PERINATAL MORALITY

| Deaths | Present Series % | Dublin Series %(O'Driscoll) |
|----------|---------------------|--------------------------------|
| FSB | 0.67 | 0.1 |
| Neonatal | - | 0.06 |

APGAR SCORES AFTER BIRTH

| Score | Controls % | | ARM % | | Pitocin % | |
|--------|------------|-------|-------|-------|-----------|-------|
| | 1 min | 5 min | 1 min | 5 min | 1 min | 5 min |
| 9 - 10 | 76 | 92 | 88 | 98 | 88 | 98 |
| 7 - 8 | 18 | 6 | 10 | 2 | 10 | 2 |
| 5 - 6 | 4 | - | 2 | - | 2 | - |
| 5 | - | - | - | - | - | - |
| 0 | 2 | 2 | - | - | - | - |

Lowest Apgar scores are seen in the control group as compared to ARM and Pitocin group probably due to increased stress of prolonged labour.

Table below shows that when bradycardia and meconium staining occurred together then the foetal outcome was poor as shown by the Apgar being 6. When only meconium staining or only tachycardia occurred then the foetal out-

come was better as evidence by Apgar score being greater than 8.

This table shows that the incidence of neonatal jaundice was greatest in the pitocin group being 18% as compared to the control group which has an incidence of only 10% whereas the ARM group had an incidence of 16%. Cephalhaematoma occurred only in control group probably due to a higher incidence of vacuum delivery.

RELATION OF FHR AND MECONIUM STATING TO APGAR SCORE AT 1 MIN.

| FHR | Clear Liq. | Mean Apgar | Meconium St. | Mean Apgar |
|-------------|------------|------------|--------------|------------|
| Normal | 81.5% | 9.4 | 6% | 8.3 |
| Tachycardia | 2.6% | 8.6 | 5.3% | 7.7 |
| Bradycardia | - | - | 4.6% | 6 |

PERINATAL MORBIDITY

| Complications | Control | ARM | Pitocin |
|-------------------|---------|-----|---------|
| Neonatal jaundice | 5 | 8 | 9 |
| Birth asphyxia | 5 | 4 | 5 |
| Cephalhaematoma | 2 | - | - |
| Cord sepsis | 1 | 1 | - |

Discussion

In our series the concept of high risk was transferred from mother to the child, where it rightly belongs. The progress of labour was regulated to ensure that every woman delivered within 12 hours and definitely within 24 hours. In adopting an active role the obstetrician first decides whether a woman is in labour or not and woman is kept under constant observation if she is found to be in labour. The membranes are ruptured at an early stage to ensure progressive cervical dilatation. Clear liquor gave reliable evidence that foetus would survive normal labour whereas presence of meconium distinguished the vulnerable foetus because placental function was already impaired. No harm resulted to any mother or child following amniotomy and there was no evidence that ARM retarded labour as suggested by Friedman and Sachtleben (1962). An i.v. infusion of pitocin helped in progress of unsatisfactory labour following ARM.

Conclusion

Active management of labour can convert one of the most important times in a family life into a safe situation. Physiological facts are translated into measured parameters which facilitate analysis and better obstetric judgement. Active man-

agement of labour is recommended to minimise the far reaching deleterious effects of prolonged labour on both mother and foetus. It is difficult to find scientific evidence that the foetal benefits per se by passing through birth canal or rapid active labour no matter how rapid resulting harm to the foetus when labour and delivery are intelligently and skillfully conducted. There is an old motto describing the aim of labour for mothers as "not what she can accomplish" which applies to the foetus whose goal must be to simply accomplish "escape" from the closely restraining birth canal rather than to endure any given amount of labour. It has been aptly said that "of all the journey's which we ever make, the most dangerous one is the very 1st we ever take, through the last 10 cms of the birth canal." Prompt and proper management of this journey reaps life long advantages in terms of the quality of life we enjoy.

References

1. Friedman E.A. and Sachtleben B.S. *Am. J. Obstet. & Gynaec.* 84, 930, 1962.
2. O'Driscoll - *J. Obstet. & Gynaec. of Brit. Commonwealth* 77, 385, 1970.
3. O'Driscoll K., Coughlan, Mr. Fenton V. & Shelly M., *Brit. Med. J.* 2, 1451, 1977.
4. O'Driscoll K. & Meagher D. *Active management of labour. The Dublin 2nd Ed. 1986. 28, Bailliere Tindal London experience.*