ACTIVE VERSUS EXPECTANT MANAGEMENT OF LABOUR STUDY OF 100 CASES

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ABSTRACT
Objective: *The objective of the study was to evaluate the effect of active management of labour on maternal and fetal outcome and duration of labour and whether it lowers the cesarean section rate or otherwise.*
Study Design: *Quasi-Experimental study.*
Setting & Duration: *Department of Gynecology and Obstetrics, Unit II, Civil Hospital, Karachi from January 2007 to June 2007.*
Methodology: *One hundred pregnant women presenting in spontaneous labour at term were recruited in the study. They were divided into an active management group and a expectant management group. Each group containing 50 women. Active management consisted of routine early amniotomy, early use of oxytocin while expectant management consisted of no routine amniotomy and more selective use of oxytocin. Maternal and fetal outcome was observed in terms of duration of labour, mode of delivery and in case of fetus intra partum hypoxia identified by passage of meconium and apgar score at 1 minute and 5 minutes.*
It was concluded that active management had advantage over expectant management that it reduced the duration of labour. There was no significant difference in the mode of delivery and fetal and maternal outcome.
Conclusion: *Active management did not reduce the rate of caesarean section or operative vaginal delivery.*

KEYWORDS: *Labour, Partogram, Amniotomy Augmentation, Maternal and Foetal Outcome*

INTRODUCTION

Active management of labour has been proposed as a strategy to lower the incidence of cesarean section and prolonged labour leading to reduction in maternal and fetal morbidity.[1-2] (O' Driscoll). Adverse effects of prolonged labour include pelvic floor injury, fistula formation and intrapartum infection whose incidence is related to length of labour and contributes significant morbidity for women in later life.[3]

One of the most radical contribution to obstetric care is the protocol introduced by O' Driscoll K in early 1970 at National Maternity Hospital in Dublin, Ireland the original concept was aimed at avoiding prolonged labour by limiting its duration in nulliparous to maximum of 12 hours.[1] To achieve this aim O'Driscoll[5] paid special attention to the exact diagnosis of true labour, which was admission criteria to labour ward. The basic principle is diagnosis of labour, based either on painful regular uterine contractions with cervical dilatation more than 3 cm and or positive show.

Active management of labour includes a number of key components including an objective diagnosis of labour, maintenance of partogram, two hourly vaginal examination, early amniotomy, early diagnosis of inefficient uterine action and its correction with oxytocin to augment labour, use of analgesic and anti spasmodic drugs.

Active management of labour originated as an approach to counter the wide spread view that the first stage of labour was to be managed expectantly with intervention reserved for 2nd stage of labour, often in the form of operative vaginal delivery.

The artificial rupture of membrane is now widely advocated method of augmenting uncomplicated labour. It is recommended as a component of active management. The new approach was meant to decrease the negative

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aspect of prolonged labour and emphasize SVD (spontaneous vaginal delievery) than operative delievery. It was a response to concern that nulliparous labour was a prolonged experience producing fear, pain and anxiety in parturient.

Artificial rupture of membranes reduces the duration of labour and occurrence of dystocia with improvement in fetal outcome.[6] The routine amniotomy has recently been subjected to large multicentric randomized trials to examine its effect on labour. Inspite of multicentric trials and studies, there is still confusion to balance the relative benefits and risks.[7]

The World Health Organization (WHO) has published a randomize controlled trial using active management protocol and use of a single line partogram and compared it with using expectant protocol. The protocol described for use of a partogram in WHO study differs markedly from accepted practice. The generally accepted practice has been for immediate use of oxytocin once an alert line on partogram is crossed after excluding cephalopelvic disproportion and ensuring fetal well being. Whereas WHO protocol is to use oxytocin infusion once an action line on Partogram is crossed which is drawn parallel to but four hours later than the alert line. Hence the WHO recommendation for the management of labour is expectant whereas our generally accepted practice is aggressive.[8]

Dujardin have shown there is a significant increase in the need for neonatal resuscitation once the alert line is crossed and a significant increase in perinatal mortality if the action line in crossed.[8] Thornton and Lilford using meta analysis have shown that there is no convincing evidence that the early use of oxytocin in slow progress of labour confers any advantage to the mother and baby.[8] Hence there is considerable doubt as to which protocol is best for management of labour. To resolve this dilemma this study would be conducted to compare a policy of aggressive management with expectant management.

METHODOLOGY

Qausi experimental study conducted at Gynae Unit II Civil Hospital Karachi from 1st January 2007 till 30th June 2007 and total number of patients included in this study were 100 (50 in each group). It was Non- Probability convenience sample.

This study included Nullipara, Multigravida up to Gravida 3 and singleton gestation in cephalic presentation at terms presented in spontaneous labour in active phase with reactive fetal hearts and no contraindication to vaginal delivery. Patients with gestational age less than 36 weeks, malposition or malpresentation, obstructed labour, fetal distress on admission, intrauterine growth restriction, severe maternal disease, cervix more than 8 cms dilated, previous caesarean section were excluded.

One hundred pregnant women were selected from labour room according to inclusion and exclusion criteria, the purpose, procedure, risks and benefits were explained to them and written informed consent was taken. Eligible pregnant women were alternatively selected into either active management Group A or expectant management Group B protocol of labour after making a careful diagnosis of labour. Diagnosis of labour made using following criteria: painful regular uterine contractions with cervical dilatation more than 3cms and or positive show.

The active management in group A consisted of an early amniotomy i.e. one hour or less after admission. The membranes were ruptured with kocker's forceps under aseptic measures. They were given sterlised pads. Injection ampicillin 500 mg was given intravenously 6 hourly after test dose to cover the risk of infection. Vaginal examination was performed after 2 hours and if that revealed cervical dilatation of less than 1cm per hour or if alert line on partogram was crossed a diagnosis of inadequate progress was made then oxytocin infusion was started to augment the labour. According to standard protocol for oxytocin infusion is to start from imu/minute and it was increased by miu/minute every 30 minutes upto a maximum of 10 miu/minute this increment was stopped if there were 3 contractions lasting at least 40 seconds every 10 minutes or there were changes on cardiotocograph suggestive of fetal distress.

In group B the expectant management consisted of leaving the membranes intact as long as labour progressed normally. Membranes were ruptured when there was arrest of dilatation or if the action line on partogram was crossed which is parallel to the alert line but 4 hours to the right of alert line and oxytocin infusion was started according to the regimen described above. 2 hourly vaginal examination done for assessment of progress of labour until delivery.

The basic standard care of fetal heart monitoring was intermittent auscultation. Electronic fetal monitoring was used when fetal hearts were non-reassuring by intermittent auscultation or if the liquor was meconium stained. Then oxytocin infusion was discontinued and follow-up done 30 minutes later.

In both groups labour management was similar accept for amniotomy. Patients were closely monitored by making partogram. Analgesia was given whenever need-

ed. Outlet forceps were applied for prolonged second stage of labour i.e. more than one hour. Cesarean section was performed whenever indicated. In both groups duration of labour and mode of delivery was assessed as spontaneous vaginal delivery, instrumental vaginal delivery (forceps) or cesarean section.

Fetal outcome in terms of apgar score at 1 minute and at 5 minutes, need for resuscitation, admission to intensive care unit and still births were noted in both groups. Data was coded and analyzed at SPSS version 10 univariate or bivariate tables were constructed and simple percentages were calculated. Test of significance difference between the two means or chisquare which ever required was used to estimate the difference between study and control group.

RESULTS

Fifty women were included in each group in this study. Both groups were comparable in duration of pregnancy and cervical dilatation at the time of admission in labour ward. Amniotomy during the first stage of labour was performed in 100 percent patients of group A while it was performed in only 64 percent of patients of group B. Oxytocin was used in 80 percent of patients in study group while it was used only in 42 percent patients of control group.

From these findings we concluded that active management affected the total duration of delivery. (While comparing mode of delivery in both study and control group, 82 percent patients in study group had spontaneous vaginal delivery, 8 percent were delivered by applying forceps and 10 percent underwent lower segment cesarean section. In control group 80 percent had spontaneous vaginal delivery, 8 percent were delivered by applying forceps and 12 percent underwent cesarean section. Table II shows that almost negligible difference in fetal/neonatal outcome was found between two groups.

DISCUSSION

The present study was conducted in Civil Hospital, Karachi which is a tertiary care hospital. This study showed that there is shortening of duration of labour about 100 minutes in actively managed group as compare to expectant managed group. This study is supported by protocol instituted by O'Driscoll in 1973. O' Driscoll[1] introduced their active management protocol at National Maternity Hospital in Dublin. The original concept was aimed at avoiding prolong labour by limiting its duration in nulliparous women to a maximum of 12 hours.

In 1984 O'Driscoll investigated a group of 3106 women who were nulliparous. He ascribed the high rate of dystocia in the nulliparous patients to inadequate uterine activity and need to overcome the increased soft tissue resistance of the untried birth canal. They used oxytocin for slow labour i.e. progress of cervical dilatation of less than 1cm/hour was recognized and corrected by incremental doses of oxytocin. The incidence of prolonged labour was reduced to 3% by limiting the incidence of dystocia.[6] This study is also supported by another study conducted by Rabeeca Rogers[9] who concluded that patients under going active management had short labour and were delivered within 12 hours and it favours results concluded in current study. Frigoletto FD also observed shorter duration of labour in actively managed nulliparous women.[10]

Meta analysis of randomized controlled trials which assessed the effect of the policy that combined early amniotomy with early oxytocin administration was conducted in France. A delay in progress of labour was observed in conservative management group and it favours results obtained in my study.[11] Another study conducted by RC Pattinson[12] reveals that patients in the active management group had overall shorter duration of labour mostly in the first stage. Two prospective randomized control trials have been publis-hed in United States those of Lopez-Zeno[13] and Frigo-letto.[10] Both of these studies use the same tenets namely early diagnosis of true labour, early amniotomy and use of oxytocin. These studies also observed that length of labour was significantly shortened by 1.7 and 2.7 hours respectively. Results of my study regarding duration of labour are also supported by Sadler[14] According to Impey LMD duration of labour was shortened with active management of labour. Bohra[4] and Tabowei[8] also claimed shorter duration of labour with active management of labour women. All above findings were supported by O' Dris-

Table I. Comparison of duration of labour between active andexpectant management group

Groups	No. of patients	Mean duration in minutes	St. Deviation
Active (A)	41	469.63	120.24
Expectant (B)	40	568.62	186.37
Difference b/w two means		98.99	

Characteristics	Active Group (A)	Percentage	Expectant Group (A)	Percentage
Intrapartum meconeum	**4**	**8**	**5**	**10**
Apgar score < 7 at 5 minutes	**6**	**12**	**5**	**10**
Resuscitation	**6**	**12**	**5**	**10**
Admission to intensice care unit	**4**	**8**	**3**	**6**
Still birth	**-**	**--**	**-**	**--**

Table II. Fetal and Neonatal outcome in active and expectant management group

coll.[1] The cesarean section rate was 5.5% in his study. Active management of labour was further evaluated by two other studies[3,10] and results were comparable to my study. In another study conducted by Hendrik.[15] It was concluded that within a setup of strict labour diagnosis, and supportive midwifery care, routine amniotomy and use of oxytocin offered no significant advantage over a more selective use in terms of mode of delivery. As mode of delivery was comparable in both groups. The effectiveness of active management of labour in the reducing cesarean section rate remains controversial.[15]

According to the study conducted at Pretoria Academic Complex South Africa[12] it was concluded that active management of labour reduces the cesarean section rate in nulliparous women but requires more intensive nursing. Same results were observed by Hassan and Musarrat[16] the above results are not comparable to the results obtained in this study as there was no significant difference in rate of cesarean section in both groups. Serman[9] also reported that active management of labour can reduce cesarean section rate. In this study there was no effect of active management of labour on neonatal outcome and is supported by study conducted by Barrett[16] but one of the studies showed an increase in the incidence of poor neonatal outcome in the patients who received active management.

CONCLUSION

Active management protocol of labour with early amniotomy and early use of oxytocin shortens the duration of labour, especially the first stage of labour. Active management of labour has insignificant effect on mode of delivery i.e. spontaneous vaginal delivery, instrumental delivery or caesarean section. Active management has no adverse effect on fetal outcome.

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