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"MATERNAL & FETAL OUTCOME OF PROGRAMMED LABOR"

KEYWORDS

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ABSTRACT Labor is a physiological but painful event. Definition of normal labor is the spontaneous onset of regular painful uterine contractions associated with the effacement and dilation of the cervix and descent of the presenting part with or without show or ruptured membranes . The concept of active management of labor was first implemented by 'O' Driscoll and colleagues at National Maternity Hospital, Dublin in 1968. The concept of providing relief from pain has been tardy in acceptance, however experience has shown that providing pain relief during labor reduces maternal stress and results in shorter labors and improved maternal outcome. "Optimizing labor protocol" or " programmed labor"2,6 refers to ensuring smooth progress of labor resulting in the delivery of a healthy baby, by vaginal route of a healthy mother, through judicious use labor inducers, appropriate obstetric analgesic regimen and partographic monitoring . Therefore, the present study is designed to evaluate the maternal and fetal outcome in relatively pain free deliveries by using analgesics and sedatives like Tramadol, Drotaverine and Diazepam .

AIMS AND OBJECTIVES

1. To study the effect of sedatives and analgesics on pain relief in programmed
   labor by using Pain scoring system.
2. To compare the maternal and fetal outcome in both groups.

PATIENTS AND METHODS:

A randomized case control study carried out in patients attending the labor room at Department of obstetrics and Gynaecology , Government General Hospital, Kurnool during 2014 and 2015.

Two hundred primi gravidae with low risk who were in active phase of labor were,taken into the study , and divided into two groups . Group A includes 100 cases (who were given analgesics and sedatives) , Group B as 100 controls respectively..

Inclusion criteria

1. Primi gravid ,term gestation in active phase of labor with intact membranes ,

adequate liquor , singleton vertex presentation, average size baby , Normal fetal Heart rate with adequate pelvis. 2. Patients in active phase of labor with more than 3 contractions in 10 mins each lasting for 35 to 45 seconds, cervical dilatation 3-4 cms and well effaced cervix.

Exclusion criteria were Multigravidae, ruptured membranes,known Anaphylaxis to drugs, Multiple gestation, Pre term and post term Contracted pelvis, Cephalo-pelvic disproportion , malpresentations ,oligo and Polyhydramnios Meconium stained liquor and Non reassuring cardiotocography,.Medical diseases complicating pregnancy and high risk pregnancy.

Method

On admission to labour room, detailed history was taken. Clinical and pervaginal examination was done to asses active phase of labor. The patient is counselled and the procedure is explained to her in simple terms, informed consent was taken by

1. Explanation about the use of drugs to relieve pain during labor.

2. Explanation in simple terms that these drugs are meant to reduce the intensity of pain and thereby contribute to shorter duration of labor.

3. Explanation about the possible side effects of these drugs, with assurance that its use in large trials have shown to be safe for mother and infant.

The patients entered the study in their active phase (3-4cm), which was marked as zero hour on the partogram. ARM and syntocinon augmentation1 was started depending on the intensity and frequency of uterine contractions in incremental doses

Pain Score: was assessed both groups according to the Verbal Rating Scale (VRS)
Score -1 Mild and bearable labor pains
Score -2 moderate labor pains, patient is desirous of pain relief
Score -3 Severe unbearable pain, patient demands pain relief

Partogram was started from 3-4 cm of cervical dilatation and ARM is done, colour of liquor is noted

To the study group the following drugs given
· Injection Tramadol in the dose of 1mg/kg body wt. IM,
· Injection Drotaverine hydrochloride 40 mg IV. Repeated 2nd hourly if necessary.

. A low dose sedative and analgesic consisting of 2 mg of Diazepam and 6mg
of pentazocine administered, after diluting 1 amp each with with 7 ml of normal saline and injecting 2 ml slow IV..labor progress is monitored

The "pain relief scores" recorded after ½ an hour after administration of analgesics and sedatives, and at the end of 2nd stage of labor, (Pain score 0- No relief, score 1- Mild relief, Score 2- Substantial relief and Score 3- Total relief) in both case control groups. the mode of delivery ,maternal ad fetal outcome were compared. Neonatal outcome was measured in APGAR score at 1min and 5 min, NICU admissions and deaths. Side effects and complications were noted in both groups the results obtain were compared and analysed statistically. MS Excel 2010 was used values are presented as Mean, Slandered

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deviation and percentages For comparing means, Z Test was used For all Statistical analysis p Value less than 0.05 was considered as statistically significant.

OBSERVATIONS AND RESULTS

This is a case control study where the majority of parturient in the study group were between 21 to 25 years (68% Vs 52 %) where as between 18-20 years (30% Vs 40 %) and 26 to 30 years (2% Vs 8%) the number of patients were more in the control group .

Pain relief score by verbal rating scale in terms of 3,2,1 and 0 complete, moderate, mild and no pain reliefs respectively. The score is compared between study group and control group at the onset of active labor that is at active phase of labor as shown in Table number 1.

Table – 1. Programmed labor - pain relief scores

PAINRELIEF SCORE VERBAL RATING SCALE	STUDY (n=100)	CONTROL (n=100)
3 (Complete pain relief)	0	0
2 (Moderate pain relief)	68 (68%)	0
1 (Mild pain relief)	22 (22%)	4 (4%)
0 (No pain relief)	10 (10%)	96 (96%)

Pain relief score is assessed and compared at the end of second stage of labour .No patient had complete pain relief as opposed to moderate pain relief in 68% and mild relief in 22% and 10% had no relief in study group .But in control group majority had no pain relief (96%) and 4% had mild relief., .p value <0.0001 highly significant.

Table – 2 A comparison of the Mode of Delivery in the different Studies

MODE OF DELIVERY	STUDY (n=100)	CONTROL (n=100)
Normal	96 (96%)	90 (90%)
Forceps/ Ventouse	4 (4%)	6 (6%)
Cesarean section (Undiagnosed CPD)	0 (0)	4 (4%)

All cases in the study group delivered vaginally but 4% required forceps application Table – 2 . Where as in control group 96% delivered vaginally and 4% has EMLSCS. Of 96% vaginal deliveries 6% required instrumental deliveries. Statistically not significant. There were no major complications in any of the patients in study or control group. Two cases in the study group needed assistance of forceps and.2cases in the control group needed caesarean section due to undiagnosed CPD. Statistically not significant .

The majority of the babies delivered were between 2.5-3 kgs which conforms to the hospital average.10% of the babies in the study group and 8% of the babies of controls were <2.5 kgs. These babies were constitutionally small and had no features suggestive of IUGR or prematurity.

There were thus no significant differences in the birth weights as the cases were selected randomly. All cases in the study group delivered vaginally but 4% required forceps application Where as in control group 96% delivered vaginally and 4% has EMLSCS. Of 96% vaginal deliveries 6% required instrumental deliveries. Statistically not significant .

APGAR scores

In study group ,all the babies had APGAR >5 at birth. 2% of the babies and 6% of the babies in the control group had APGAR 5-8 at 1 minute. All the babies in both groups had Apgar >10 at 5 minutes

Table – 4 Programmed labor - side effects in mot

Side effects	Study (n=100)	Control (n=100)
Nausea and Vomiting	6 (6)	10 (10)
Drowsiness	4 (4)	0 (0)

Most common side effect are nausea, vomiting and drowsiness, which were subsided immediately after delivery,. All the women in study group were in good healthy condition at the time of discharge.

Table – 5 Programmed labor - complications in neonates

Complication	Study (n=100)	Control (n=100)
Birth Asphyxia (mild)	2 (2)	2 (2)

Two babies in the study group and 2 babies in controls had mild birth asphyxia and all
recovered within 5 mins. Overall, all the babies general condition was good at discharge.

DISCUSSION:

Pain relief scores

It was assessed by verbal rating scale system . There is complete pain relief occurred in Veronica5 et al and Meena Jyoti, et al studies that is 70% and 54% respectively, where as Shahida et al (37%) Madhavi et al (36%) Shirish N Daftary7 et al(24%) and .Savita Konin et al (19%) showed complete pain relief . No case had complete pain relief in G. Sravani et al, Nitin et al studies which are correlating with our study. Shirish N Daftary et al(62%), Savita Konin et al(60%) ,Madhavi et al(56%), and Shahida et al(48%), studies the moderate relief is commonly occurred in study groups which is correlating with our study (68%). The results arestatistically significant .The patients in Meena Jyoti, et al(32%) G. Sravani et al (24%) Nitin et al(26%) and Veronica Irene et al (16.7%) had moderate pain relief . Mild pain relief occurred in 22% of patients in our study which is correlated with Savita Konin et al study (20%). The other studies showed mild relief in the range of 8% to 15% as shown in the above table. G. Sravani et al (66%) and Nitin et al(47%) studies had mild relief of pain .G. Sravani etal (10%) and Nitin et al(27%) studies showed no pain relief which is correlated with our study (10%) .

The present study, when compared to other studies, the pain relief was less. This is possibly because Ketamine, an analgesic used during 2nd stage in other studies has not been used in our present study.

The mode of delivery

is measured in terms of vaginal deliveries and abdominal deliveries .Vaginal deliveries include spontaneous vaginal deliveries and instrumental deliveries. In Meena Jyoti, et al, G. Sravani et al and our study, all study group cases delivered vaginally and 4% required instrumental deliveries. The other studies as showed the maximum vaginal deliveries with increased instrumental deliveries and lower segment caesarean section which is statistically not significant.

APGAR scores

The Apgar scores of newborns were assessed at one minute and five minute interval.

Only 2% of babies had less than seven APGAR at 1 min in our study which is correlating with Meena Jyoti3, et al , Savita Konin10 et al and Nitin9 et al studies.10% of G. Sravani et al

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.study had less than seven .All of the babies recovered at five minutes in G. Sravani11et al, Savita Konin et al and our study. where as Madhavi8 et al and Nitin et al studies had recovery at five minutes. It is statistically not significant.

In summary there is highly significant moderate pain relief with shortened all stages of labour with good maternal and fetal out come was observed in this study .

Side effects

Minimal maternal side effects like nausea ,drowsiness occurred in our study. The studies we compared showed various side effects ranging from tachycardia, hallucination, nausea ,vomiting ,drowsiness and diarrhoea. Meena Jyoti, et al, Nitin et al and Shahida4 et al had more number of perineal tears . But our study did not have any perineal tears in both groups. The side effects most probably attributed to use of ketamine in late first stage in previous studies. All the babies recovered after five minutes and were well at discharge.

CONCLUSION

With the invent of various protocols in pain relief during labor, the quality of labouring women has been improved .Intravenous administration of low doses of Pentazocine and Diazepam has reduced the pain to the moderate relief .The rate of cervical dilatation is decreased by using drugs like Drotaverine and Tramadol which in turn reduce the duration of all stages of labor with good maternal and fetal outcome with minor side
effects.

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