

Level of cervical dilatation and request for regional analgesia by pregnant women with intact and ruptured chorioamniotic membrane*

Grau de dilatação cervical e solicitação da analgesia regional por parturientes com membranas corioamnióticas íntegras e rotas

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SUMMARY

BACKGROUND AND OBJECTIVES: Several factors change pain intensity during parturition, such as parity, chorioamniotic membrane rupture, cervical dilatation, in addition to cultural and environmental influences. So, this study aimed at checking the number of regional analgesia requests and the level of cervical dilatation at analgesia request by parturients with intact chorioamniotic membranes and those with chorioamniorrhexis.

METHOD: This is a descriptive and retrospective study which analyzed 208 medical charts of primiparous parturients, 129 with intact chorioamniotic membranes and 79 with chorioamniorrhexis, assisted by the Women Health Center of Ribeirão Preto, SP, from November 2008 to May 2009. Mann-Whitney and Chi-square tests were used for statistical analysis

with significance level of $p < 0.05$ and 95% confidence interval.

RESULTS: Regional analgesia was requested by 87.9% of parturients selected for this research. Mean cervical dilatation for intact membrane patients was 6.26 ± 1.67 cm and for those with chorioamniorrhexis it was 6.11 ± 1.75 cm, without significant difference between groups ($p = 0.12$). With regard to the type of analgesia there has been predominance of double block, without significant differences between groups ($p = 0.84$).

CONCLUSION: Most parturients have requested double block regional analgesia with mean cervical dilatation of 6 cm, with no difference between intact and ruptured chorioamniotic membranes.

Keywords: Analgesia, Assistance humanization, Labor.

RESUMO

JUSTIFICATIVA E OBJETIVOS: Durante o processo de parturição, diversos fatores alteram a intensidade da dor, tais como a paridade, a rotura de membranas corioamnióticas, a dilatação cervical, bem como influências culturais e ambientais. Assim, os objetivos deste estudo foram verificar o número de requisições de analgesia regional e o grau de dilatação cervical no momento da solicitação da analgesia pelas parturientes com membranas corioamnióticas íntegras e aquelas com corioamniorrexe.

MÉTODO: Trata-se de um estudo descritivo e retrospectivo, com análise de 208 prontuários de parturientes primigestas, 129 com membranas corioamnióticas íntegras e 79 com corioamniorrexe, assistidas no Centro da Saúde da Mulher de Ribeirão Preto, SP, no período de novembro de 2008 a maio de 2009. Para análise estatística dos dados foram utilizados os testes de Mann-

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Whitney e o Qui-quadrado, com nível de significância $p < 0,05$ e intervalo de confiança de 95%.

RESULTADOS: Foi solicitada analgesia regional por 87,9% das parturientes selecionadas para esta pesquisa. A média da dilatação cervical para as pacientes com membranas íntegras foi de $6,26 \pm 1,67$ cm e para aquelas com corioamniorrexe foi com dilatação de $6,11 \pm 1,75$ cm, não havendo diferença significativa entre esses dois grupos de parturientes ($p = 0,12$). Em relação ao tipo de analgesia, houve predomínio do duplo bloqueio, sem diferenças significativas entre os dois grupos avaliados ($p = 0,84$).

CONCLUSÃO: A maioria das parturientes deste estudo solicitou analgesia regional tipo duplo bloqueio com em média 6 cm, de acordo com a dilatação cervical, não havendo diferença entre primigestas com membranas corioamnióticas rotas e íntegras.

Descritores: Analgesia, Humanização de assistência, Trabalho de parto.

INTRODUCTION

During parturition, pain characterized as acute and severe is a subjective and individual experience involving a broad interaction between physiological and psychosocial factors¹. Many factors, such as parity, chorioamniotic membrane rupture, cervical dilatation and cultural and environmental influences, change pain intensity².

Non-pharmacological and pharmacological methods may help labor pain relief. Although there are evidences proving the benefits of non-pharmacological resources, such as massage, hydrotherapy, ambulation and transcutaneous electrical nerve stimulation (TENS), these techniques are still seldom used in Brazilian maternities^{3,4}.

Epidural, subdural or double-block regional analgesia allow the adequate control of pain in all labor stages, provided adequate volumes and doses are used, which will result in minor hemodynamic changes and motor block, allowing ambulation⁵⁻⁷. Combined regional analgesia is an increasingly popular option becoming due to short latency and labor effectiveness. Spinal opioid agonist administration controls labor dilatation phase pain, and the injection of local anesthetics via epidural catheter relieves expulsion period pain⁸.

This study aimed at checking the number of regional analgesia requests and the level of cervical dilatation at request by parturients with intact or ruptured chorioamniotic membranes.

METHOD

After approval by the Ethics and Research Committee, School of Medicine of Ribeirão Preto, SP, n. 4262/2009, this retrospective and descriptive study was carried out based on the evaluation of medical charts of women admitted for labor assistance in a public maternity of Ribeirão Preto, SP (Women's Health Reference Center – MATER).

Medical charts were selected from November 2008 to May 2009, of parturients meeting inclusion criteria: primiparous, gestational age above 37 weeks, intact or ruptured chorioamniotic membranes until admission to the Obstetric Center. Participated in this study 208 parturients being 129 with intact chorioamniotic membranes and 79 with chorioamniorrhesis.

Data were collected via protocol contemplating the following parameters: patient's age, marital status, occupation considering just whether employed or not, education, chorioamniotic membrane integrity, cervical dilatation at regional analgesia request and type of regional analgesia.

SAS[®] 9.0 software was used for statistical analysis. Fisher Exact test and Wilcoxon test were used to check the association between parturients with intact chorioamniotic membranes and those with chorioamniorrhesis with regard to age, education, occupation and marital status. Mann-Whitney test was used to compare cervical dilatation at analgesia request among patients with intact and ruptured chorioamniotic membranes. Chi-square test was used to evaluate the type of analgesia. Significance level was 5% and confidence interval was 95%.

RESULTS

Mean patients age was 20 years, without difference between groups ($p = 0.07$). Most patients from both groups had completed high school, however there has been difference between groups ($p = 0.02$) (Table 1), because the number of parturients with chorioamniorrhesis with high school was higher than the number of parturients with intact membranes. As to marital status, most parturients informed consensual union, however without difference between groups ($p = 0.27$) (Table 1).

Most patients of both groups were unemployed, however there has been difference between groups ($p < 0.001$) (Table 1), because there were more unemployed patients among the intact membrane group as compared to the ruptured membrane group.

Table 1 – Sociodemographic characteristics of intact and ruptured membrane groups

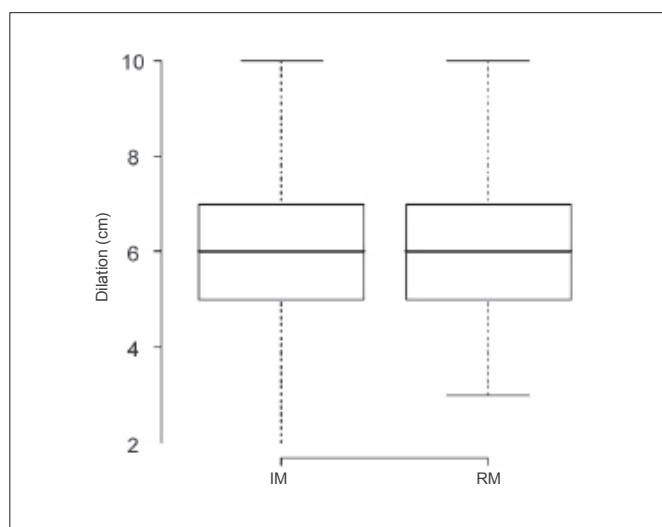
	IM Group (n (%))	RM Group (n (%))	Total	p value
Education				
Elementary	52 (40%)	18 (23%)	70	0.02
High school	75 (58%)	59 (75%)	134	
College	2 (2%)	2 (2%)	4	
Marital status				
Consensual union	67 (52%)	36 (46%)	103	0.27
Married	22 (17%)	21 (27%)	43	
Single	40 (31%)	22 (27%)	62	
Occupation				
Unemployed	111 (86%)	49 (62%)	160	<0.001
Employed	18 (14%)	30 (38%)	48	

IM = intact membrane; RM = ruptured membrane

Only 12.1% of parturients did not receive analgesia. From 87.9% requesting regional analgesia, this was requested with mean cervical dilatation of 6.21 ± 1.7 cm.

There has been no statistically significant difference ($p = 0.12$) between intact ($n = 117$) and ruptured ($n = 66$) membrane patients, since mean dilatation when analgesia was requested was 6.26 ± 1.67 and 6.11 ± 1.75 cm, respectively (Graph 1).

With regard to the type of analgesia during labor, combined analgesia prevailed in 67.8% of parturients, followed by epidural in 21.3% and spinal in 10.9%. There has been no association between the types of analgesia used in intact or ruptured membrane patients ($p = 0.84$).



Graph 1 – Mean regional analgesia request by parturients with intact and ruptured membrane.

IM = intact membrane; RM = ruptured membrane

DISCUSSION

Labor pain is difficult to evaluate because it is subjective and its intensity may be considered intolerable by a large number of parturients. Santana et al. have evaluated pain intensity in 91 primiparous patients during labor active phase, with cervical dilatation of 4-5 cm. It was observed that mean pain intensity reported by parturients through a numerical categorical scale was 7.37, considering pain in this labor stage as very severe⁹

So, it is imperative that health actions provide not only safe conditions, but also those aiming at humanizing labor. To be assisted during labor, with the possibility of controlling pain when and if necessary, is a Brazilian women’s right ensured by Ministry of Health directives (2.815 of 1998 and 572 of 2000), which include labor analgesia and non-pharmacological alternatives for labor, which have been used throughout the history¹⁰. A study reports differences between parturient and obstetrician views during and after labor, especially with regard to pain intensity during labor¹¹. Some authors have reported that marked differences in education of the studied groups may indicate socioeconomic disparity¹². These variables seem to have some influence of parturients’ pain, but no studies were found directly addressing the relationship between education and occupation, and labor pain.

It was observed that in the ruptured amniotic membrane group, 75% of parturients had a higher level of education (high school) and it was expected that this group would be more tolerant with pain since better educational conditions favor the better understanding of labor physiological process and, as a consequence, being better prepared to face this phase.

Unemployment, on the other hand, is a widely discussed social issue which directly influences the psychological aspect of individuals, especially when this is a mother responsible for a newcomer to the world. This issue has been addressed as from the result of the group with intact membrane, where 86% of women were unemployed.

With regard to time for analgesia, the institution follows the recommendations of the Ministry of Health, that is, when requested by the patient. According to our sample, parturients have requested analgesia with mean cervical dilatation of 6 cm.

Premature membrane rupture is a factor increasing pain with labor evolution because the function of protecting the fetal environment against traumas is lost².

Although knowing these factors, it was expected that ruptured membrane patients would have more severe pain and would request earlier analgesia. However our study has not evidenced significant difference in analgesia request moment for parturients with intact or ruptured amniotic membrane. However, there is still no consensus in current obstetric practice about the adequate moment to induce it and about its effects on labor, delivery and mother and fetus well-being.

Some studies have shown that analgesia should be counterindicated in early labor phases, for leading to increased number of C-sections due to dystocia^{13,14}. However, a recent publication describes that the association of continuous epidural analgesia and the increased number of C-sections is just a myth⁷.

A metaanalysis involving 34 studies aimed at characterizing national and international studies about obstetric analgesia. With regard to the moment to induce analgesia during labor, this is still a questionable issue. However, one study tried to induce analgesia in the expulsive period, another in early labor (< 5 cm of dilatation) and eight waited until cervix has reached 5 cm¹².

As to the type of analgesia used in this study, there has been prevalence of double-block. A study with 40 parturients divided in two groups receiving epidural analgesia and double-block for labor analgesia, aimed at comparing the effects of both techniques on mothers and fetuses. Results have shown no significant differences between groups in pain intensity, onset time, sensory block level and Apgar index. However, analgesia duration and labor time were longer for the motor block group where seven parturients had mild pruritus.

Confirming the previous study, a study has randomized 40 labor patients with cervical dilatation between 4 and

5 cm in two groups to receive continuous epidural or combined analgesia. There has been no significant difference between groups in time between analgesia onset and complete cervical dilatation, as well as in expulsive period duration, incidence of analgesia-related C-section, maternal hemodynamic parameters and neonate vitality. The combined technique, however, has provided fast and immediate pain relief⁸.

A systematic review involving 14 controlled randomized studies with 2.047 women has compared the effects of double-block analgesia with epidural analgesia during labor. The authors concluded that double-block takes less time, as from the first administration, to effectively relieve pain and increases the incidence of maternal satisfaction. However, women receiving this type of analgesia had more pruritus and showed that there is no difference between labor analgesia types in the incidence of forceps delivery, maternal mobility, post-dural puncture headache, C-section indices or the admission of babies to the neonatal unit¹⁴.

A different review of 21 controlled randomized studies with 6.664 women has evaluated the effects of epidural analgesia, including its combination with subdural analgesia and has compared them to women and neonates not receiving pain relief during labor. The conclusion was that epidural analgesia seems to be effective to relieve pain during labor, however women under this type of analgesia had a higher risk for instrumental delivery¹⁵. Labor analgesia is an effective pain relief resource, as shown by a study which has measured pain intensity after double-block during labor as compared to a group not receiving analgesia. The study has shown that pain in the group receiving analgesia was statistically lower, as it was to be expected¹⁶.

The literature has several studies evaluating the efficacy of analgesic techniques for labor, however few studies have evaluated the duration of its effect and the number of maintenance doses applied to parturients.

It is known that high analgesic doses may be noxious for mother and fetus⁵. The use of non-pharmacological resources in early labor active phase, in addition to being effective for pain relief, postpones the use of analgesia to a more advanced cervical dilatation phase.

The World Health Organization recommends that parturients should have available non-pharmacological and pharmacological alternatives for pain relief during labor. So, the combination of these resources is beneficial not only for parturients but also for the health team and for the institution, for decreasing costs and favoring humanization.

CONCLUSION

Most parturients have requested regional analgesia at approximately 6 cm of cervical dilatation, with no difference between primiparous women with intact and ruptured chorioamniotic membranes.

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