Intrapartum fever for primiparous parturients: causing factors and effect on neonate

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Background and Goal of Study

Fever during labour and delivery occurs in 1.6-14.6% of deliveries. Maternal fever is associated with higher risk of adverse neonatal and maternal outcomes. The controversy exists about the factors that could affect the rise of temperature during labour.

The aim of this study was to determine factors causing intrapartum fever for primiparas and to find out the effect on neonate.

Materials and Methods

The study was carried out at the Department of Obstetrics of a teaching hospital in 2015. Medical records of 543 women were retrospectively reviewed. Primiparas at gestational age ≥ 37 weeks, giving vaginal birth with singleton cephalic presentation and normal weight fetus were included. Local Ethics Committee approval was obtained.

Data were analysed with the SPSS 23.0. Spearman Rank Correlation, Mann-Whitney U test, χ^2 and Logistic Regression were used. $P < 0.05$ was considered statistically significant.

Results and Discussion

Among 543 primiparas average age was 28.38 ± 5.89 years, weight gain during pregnancy 15.14 ± 6.40 kg, 49.72% gained < 15 kg, 50.28% ≥ 15 kg, BMI 22.71 ± 5.02 , labour period 647 ± 201 min, anhydrous period 465 ± 329 min. Epidural analgesia was selected in 32.78% cases. Intermittent epidural bolus were used in 7.93%, bolus and continuous epidural infusion 82.38%, patient controlled analgesia 9.69% cases. Average duration of epidural was 413 ± 220 min. The rate of intrapartum fever ($\geq 37^\circ \text{C}$) - 32.6%, hyperthermia ($\geq 38^\circ \text{C}$) - 3.3%.

The rate of intrapartum fever

Elevation of body temperature was not significantly associated with weight gain ≥ 15 kg during pregnancy (OR 0.980 (95% CI 0.722-1.330), $p=0.896$), but the occurrence of fever was associated with obesity (KMI ≥ 30) ($p<0,001$).

Elevation of body temperature was not significantly associated with the choice of epidural analgesia during labour ($\chi^2=0.001$, $p=0.980$), the duration of epidural ($r=0.1$, $p=0.182$), the mode of prescription of epidural ($p=0.417$).

Apgar score ≤ 7 at 1min was given to 7.73%, at 5min to 2.95% of neonate.

Elevation of body temperature above 38°C was significantly associated with Apgar ≤ 7 at 1min ($p < 0.05$), Apgar ≤ 7 at 5min ($p < 0.05$).

Conclusion(s)

The intrapartum fever is affected by longer duration of labour and anhydrous period, but it is not associated with weight gain during pregnancy, epidural analgesia, the mode of epidural analgesia infusion, the duration of epidural analgesia. The occurrence of fever was associated with maternal obesity before pregnancy. Intrapartum hyperthermia negatively affects neonatal condition.

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