

Umbilical cord arterial blood pH analysis at term pregnancy

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Objectives (목적)

To assess the gestational age adjusted values of umbilical cord arterial blood pH in term pregnancy.

Methods (연구 방법)

We retrospectively analyzed umbilical arterial blood pH values and obstetric data of 1,918 term singleton deliveries without maternal medical disease, pregnancy induced hypertension and fetal distress during labor periods, which were done at Kangnam St. Mary's Hospital, Catholic University medical college between January 2004 and December 2006. Low pH was defined as less than 7.10 as a stationary cutoff value, whereas pH less than the mean-2SD was used when gestational age was considered. We studied the risk of 5 minute Apgar score less than 7 and meconium staining more than grade II at low pH.

Results (결과)

A significant negative correlation was found between gestational age and umbilical artery pH ($p=0.000$). We evaluated the umbilical artery pH value in different delivery mode. Both cases of vaginal delivery and elective Cesarean section showed negative correlation (vaginal delivery group: $B=-8.678$, $p=0.000$, Cesarean section group; $r=-0.02$, $p=0.003$). Low pH patients defined by both criteria of pH less than 7.10 and pH less than the mean -2SD showed the significantly increased risk of the 5 minutes Apgar score less than 7 (pH less than 7.10: $p=0.000$, pH less than the mean -2SD: $p=0.001$) and meconium staining more than grade II (pH less than 7.10: $p=0.001$, pH less than the mean -2SD: $p=0.001$).

Conclusions (결론)

Our results suggested that umbilical cord arterial pH is significantly decreasing with advancing gestational age during term period.