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Risk factors for acidemia at birth.

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OBJECTIVE: To identify risk factors for acidemia at birth.

METHODS: From September 1988 to December 1996, cord arterial blood pH was measured in 23,016 of 27,064 live-born infants (85.0%). Values below 7.05 were observed in 264 newborns (1.1%), of whom 14 born by cesarean delivery before labor and one triplet infant were excluded from the study. The remaining 249 newborns with acidemia and their mothers were compared with 249 unmatched controls with normal pH (the first infant with umbilical arterial pH above 7.10 born after each case). Multivariate logistic regression was used to adjust for potentially confounding variables.

RESULTS: Variables significantly and independently associated with acidemia at birth were labor with breech presentation (adjusted odds ratio [OR]2.9), oxytocin administration (OR 2.1), meperidine administration (OR 2.0), cord entanglement (OR 1.7), and male gender of the infant (OR 1.4). Clinical evidence of chorioamnionitis also was associated with acidemia, although after adjustment for prematurity, the association was not statistically significant (OR 3.9, 95% confidence interval 0.8, 19).

CONCLUSION: Labor with breech presentation, administration of oxytocin and meperidine, cord entanglement, and male gender are associated with an increased risk for insufficient fetomaternal gas exchange.