Sporadic fetal heart rate accelerations during labour practically rules out acidaemia; a case-control study.

Frida Ekengård[1], Monika Cardell[1], and Andreas Herbst[1]

[1]Lunds Universitet

May 13, 2022

Abstract

Abstract Objective: To determine the occurrence of sporadic and periodic accelerations during labour and odds ratio, OR, for acidaemia. Design: Case-control study. Setting: One regional and one university hospital. Sample: Cardiotocograms, CTGs, from 295 neonates with cord blood pH <7.05 born during the second stage of labour, 70 neonates with cord blood pH <7.10 born during the first stage and 731 controls with pH [?]7.15. Method: The last 30-60 minutes of CTG recordings before birth from 365 neonates born with acidaemia and from the corresponding stage in labour for 731 controls were scrutinized. Main outcome measures: Odds ratio with 95% confidence interval for acidaemia at birth. Results: During the first stage, sporadic accelerations were present in 16% of cases and 78% of controls; OR for acidaemia 0.05 (0.02-0.10). In the second stage the corresponding rates were 13% and 60%; OR 0.09 (0.06-0.14). Isolated periodic accelerations were infrequent. A weak negative association with acidaemia was found in the second stage; OR 0.51 (0.30-0.86), whereas it was not significant in the first stage; OR 0.24 (0.04-1.4). Less than two sporadic accelerations were associated with an increased risk of acidaemia despite normal fetal heart rate variability (5-25 beats per minute, OR 10.3 (7.2-14.8)). Conclusions: Sporadic accelerations indicate a very low probability of acidosis but are absent in 40% of fetuses with normal pH during a 30-60 minutes second stage recording. Tweetable abstract: Sporadic, but not periodic, accelerations indicate normal fetal pH. This should be a part of CTG guidelines.

Hosted file

Accelerations main document.docx available at https://authorea.com/users/482529/articles/569063-sporadic-fetal-heart-rate-accelerations-during-labour-practically-rules-out-acidaemia-a-case-control-study

1a. Sporadic accelerations   1b. Periodic accelerations   1c. Lack of accelaerations