



A method to rule out transient tachypnea of the newborn

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Objective

To investigate whether fetal pulmonary artery acceleration to ejection time(PATET) ratio can predict or rule out subsequent diagnosis of transient tachypnea of the newborn(TTN).

Methods

This prospective cohort study included pregnant women in labor beyond 34th gestational weeks who gave birth within 3 days of admission, with singleton pregnancies, no congenital fetal abnormalities detected, no chronic maternal diseases or pregnancy complications. Fetuses born to these women who subsequently developed TTN and who did not develop TTN constituted two groups; TTN+ and TTN- groups. These groups' features and findings were then compared via appropriate statistical methods.

Results

The study population included 105 pregnant women. In 6 cases fetal pulmonary artery Doppler waveforms could not be acquired and 12 did not deliver in 3 subsequent days. There were no statistically significant difference between groups regarding maternal obstetric and demographic features. Neonatal intensive care unit admission rate was significantly higher in TTN + group. (100%, 17%, $p < 0,0001$, respectively.) Regarding the fetal pulmonary artery Doppler findings, PATET ratio in TTN+ group was significantly lower than in TTN- group.(0,307 vs 0,389, $p < 0,0001$, respectively). An inverse correlation was found between PATET ratio and subsequent diagnosis of TTN ($r = -0,41$ $p < 0,001$), which remained evident even after adjustment for birth weight, gestational age and fetal gender ($r = 0,42$ $p = 0,0021$). A cut off value of 0,319 was found to provide a specificity of 82,7%, sensitivity of 83,3%, negative predictive value of 96% and positive predictive value 41,6%, for the method. Intraobserver ICC of the PATET ratio measurement was found 0.86, indicating a quite reproducible method,.

Conclusion

According to the findings of this study, fetal PATET ratio seems to serve a promising tool to rule out subsequent diagnosis of TTN. However, further studies with larger study populations are needed to confirm these findings.