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Diagnostic Capacity of Acceleration Time/Ejection Time (TA/TE) Using Fetal Pulmonary Artery Doppler for Hyaline Membrane Disease

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Objectives: The objective of this study was to determine the diagnostic capacity of the acceleration time/ejection time (TA/TE) ratio using fetal pulmonary artery Doppler for the diagnosis of hyaline membrane disease in premature fetuses.

Methods : This diagnostic test was performed on 100 pregnant women between 30 and 36 weeks with singleton fetuses, hospitalized for threatened preterm delivery, rupture of ovular membranes, and preeclampsia. Doppler ultrasound of the fetal pulmonary artery trunk was performed, and the TA/TE ratio was calculated using fetal cardiology and obstetrics software. The pulmonary artery flow velocity waveform was measured; Acceleration time (TA) starts with ventricular systole and ends at the peak of ventricular systole, and ejection time (TE) runs from the beginning of systole to the end of systole. Time was automatically measured in milliseconds. A ROC curve was performed, and the cutoff point used was 0.252, which was greater than or equal to 0.252, which meant that the fetus had lung maturity.

Results: The sensitivity, specificity, and positive and negative predictive values of fetal pulmonary artery Doppler TA/TE $\geq$ 0.252 were 98.9%, 88.9%, 98.9%, and 88.9%.

Conclusion : The TA/TE ratio of 0.252 using fetal pulmonary artery Doppler in the present study is useful for predicting fetuses with adequate lung maturity.