

Increased nuchal translucency and pregnancy outcomes: a study of 8536 fetuses derived from a single center in a routine screening populations

Yuanshi Tian, Bowen Zhao

Objectives

This study aimed to evaluate the outcomes of pregnancies with increased nuchal translucency (NT) in a Chinese single center.

Methods

Data from 8536 first trimester pregnancies in a single center between January 2022 and January 2024 were screened. Patients with NT ≥ 95 th percentile were divided into two groups: group I were increased NT cases with fetal anomalies (either abnormal fetal karyotype or congenital structural anomalies) or loss (intrauterine fetal death), and group II were increased NT cases with no fetal anomalies or loss. Maternal demographic characteristics and NT measurements were compared between these two groups.

Results

Ninety-six fetuses (1.1%) that had an increased NT ≥ 95 th percentile and available pregnancy outcome were identified. Abnormal karyotype analyses were found in 11.4% of cases with increased NT (11/96). 24.0% (23/96) of increased NT cases had structural anomalies, and 12.5% (12/96) had cardiac anomalies. The maternal age, gravidity and NT measurements were significantly higher in group I ($n=35$, $p < 0.05$). According to the receiver operating characteristic (ROC) curves, the optimal cutoff values for NT measurements for predicting fetal anomalies or loss were 3.65 mm. NT measurement > 6.1 millimeters resulted in poor fetal outcomes without exception.

Conclusion

Fetal increased NT in early pregnancy can be used to predict adverse pregnancy outcomes. Higher NT measurements indicate poorer pregnancy outcomes. Fetal echocardiography should be considered for all cases with increased NT.

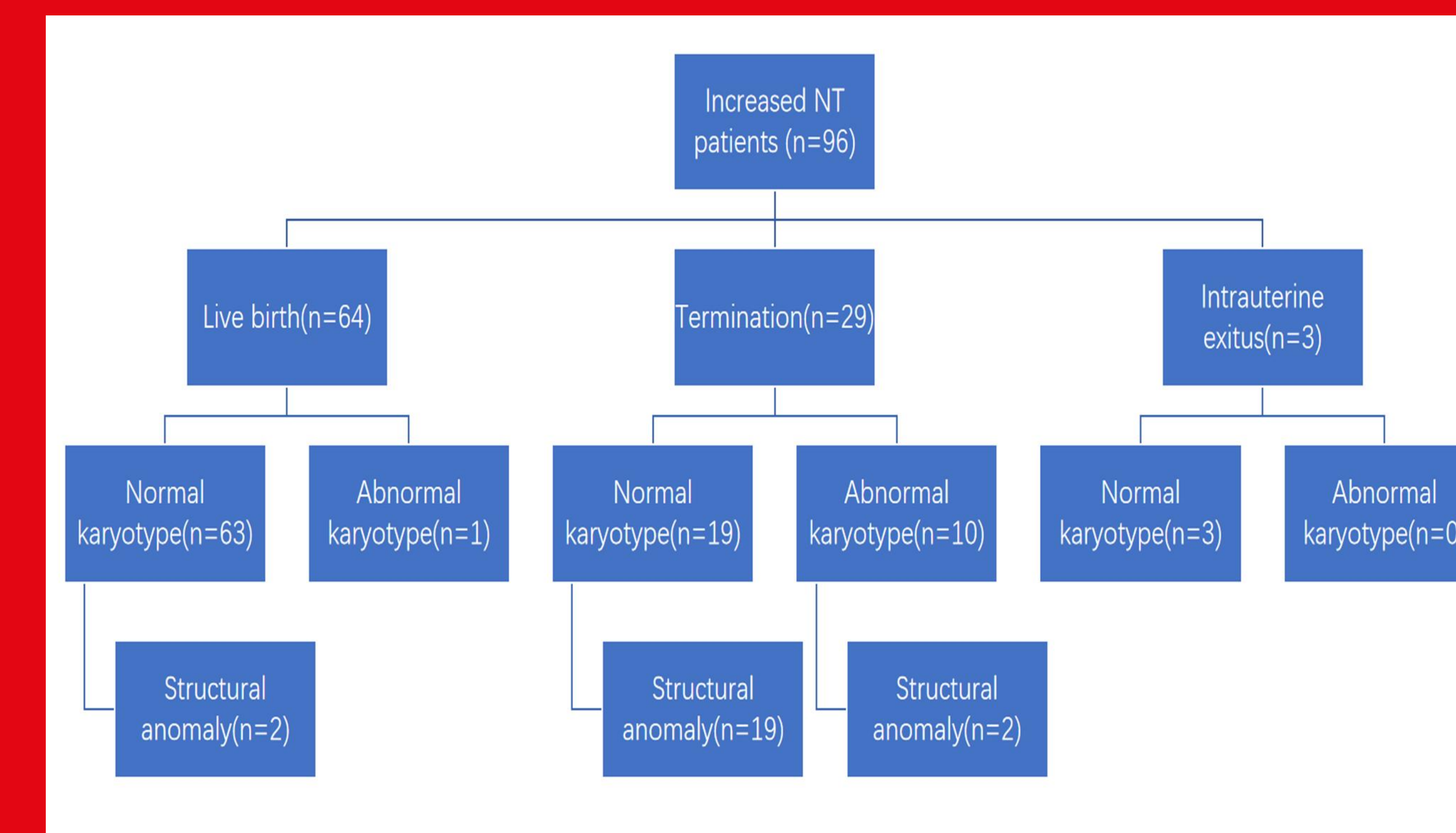


Figure 1. Fetal outcomes in cases with increased first-trimester NT

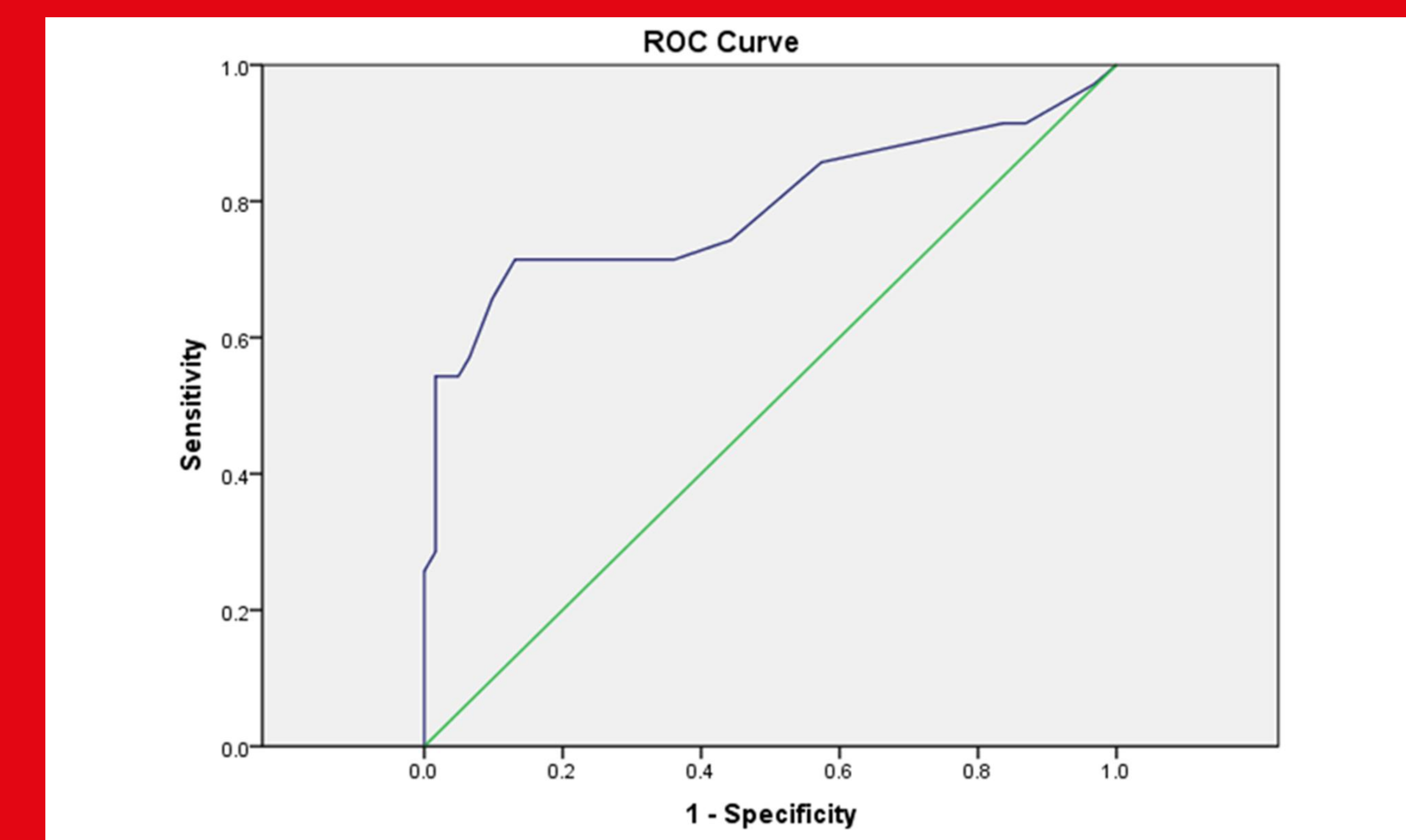


Figure2. ROC curves of NT measurements for the whole study group (n=96)