

# Analysis of the application value of speckle-tracking imaging technology to assess fetal cardiac function in the early second trimester

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## Abstract

**Objective:** We explored the usefulness of speckle-tracking imaging (STI) to assess cardiac function in fetal congenital heart disease in the early second trimester. **Method:** A total of 152 pregnant women with a singleton pregnancy who underwent early fetal echocardiography at the ultrasound department of our hospital were randomly selected. There were 40 fetuses with congenital heart disease (case group) and 112 healthy fetuses (control group). STI was performed in both groups to measure fetal left ventricular (LV) and right ventricular (RV) endocardial-myocardial global longitudinal strain (GLSendo), time to peak longitudinal strain (TTPS), fractional area change (FAC), and LV ejection fraction (LVEF). These parameters were compared between the two groups, and correlation analyses were performed. **Results:** There were no significant differences in fetal LVEF and RVFAC between the case and control groups. The LV GLSendo and RV GLSendo were lower in the case group ( $P < 0.05$ ). The LV TTPS and RV TTPS were negatively correlated with fetal heart rate in both groups. After heart rate correction, the TTPS in the case group was longer than in the control group. **Conclusion:** STI may be useful to quantitatively evaluate fetal myocardial deformation and function in the early second trimester.

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