Ultrasound assessment of twin reversed arterial perfusion sequence for predicting adverse pregnancy outcome in the first trimester

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Aims and Methods

• Aims
  – To investigate the clinical use of the ultrasound indicators, pump fetus’ crown-rump length (CRL) - acardiac fetus’ upper pole-rump length (URL)/CRL (CRL-URL/CRL) and URL/CRL in the assessment of twin reversed arterial perfusion (TRAP) sequence for predicting TRAP-related adverse pregnancy outcomes in the first trimester (a gestation of 11-14 w).

• Methods
  – Pregnant women who underwent ultrasound examination in the first trimester and were diagnosed with TRAP, were enrolled.
  – January 2013 and June 2016
  – healthy group, TTTS group, and sIUGR group
• **Demographic characteristics:**
  
  - Twenty-one pregnant women with a gestation of 11-14 w were diagnosed with TRAP using ultrasound.
  
  - The pregnant women were 21–39-years-old, the gestational age at which TRAP was diagnosed was 13.1 ± 0.18 w, and the pump fetuses’ CRL was 6.65 ± 1.1 cm.
  
  - The incidence of intrauterine death of pump fetuses was 19.0% (4/21). The miscarriage rate was 14.3% (3/21), and the live birth rate of pump fetuses was 66.7% (14/21).
There was a statistically significant difference in CRL-URL/CRL (0.58 ± 0.08 vs. 0.33 ± 0.08, p < 0.05) and URL/CRL (0.42 ± 0.08 vs. 0.67 ± 0.08, p < 0.05) between the pump fetus survival group and an adverse pregnancy outcome group (intrauterine death and miscarriage).
• CRL-URL/CRL and URL/CRL can be used as indicators for assessing adverse pregnancy outcomes of pump fetuses with TRAP at 11–14 w of gestation.