To investigate the utility of velocity-time integrals (VTI) of ductus venosus (DV) flow for the prediction of TTTS.

**Objectives**

To investigate the utility of velocity-time integrals (VTI) of ductus venosus (DV) flow for the prediction of TTTS.

**Methods**

**Patients**

Eighty-four MD twin pregnancies (27 uncomplicated MD twins and 57 TTTS cases). Fifteen pre-TTTS cases were extracted when MD twins developed to TTTS within two weeks after the assessment.

**Measurements of DV**

DV Doppler flow of larger twins and recipient twins were assessed.

**Figure 1. Ultrasonogram for assessment of DV**

Percentages of VTI-1, VTI-2, and VTI-diast from total VTI were calculated.

**Figure 2. Relationship with DV VTIs in larger twins and recipient twins**

**Figure 3. ROC curve analysis of VTI-2 (%)**

Recipient twins and pre-recipient twins showed the specific DV waveform. It seemed that larger VTI-2 and smaller VTI-1 and VTI-diast reflect impaired ventricular relaxation and increased end-diastolic filling pressures. We suggest that MD twins with VTI-2 >41.5% in one twin should be carefully managed considering the evolution of TTTS.

**Conclusions**

Recipient twins and pre-recipient twins showed the specific DV waveform. It seemed that larger VTI-2 and smaller VTI-1 and VTI-diast reflect impaired ventricular relaxation and increased end-diastolic filling pressures. We suggest that MD twins with VTI-2 >41.5% in one twin should be carefully managed considering the evolution of TTTS.