

Fetal cardiac function in twin pregnancies complicated by selective fetal growth restriction

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Objective. To investigate fetal cardiac function in monozygotic (MC) twin pregnancies with selective fetal growth restriction (sFGR) according to the umbilical artery Doppler pattern.

Materials and Methods. Prospective study including pregnancies complicated by FGR. Left and right sphericity index (SI), myocardial performance index, mitral (MAPSE) and tricuspid annular valve displacement were compared in MC twins with sFGR (Type I: persistently positive EDF, Type II: persistent AEDF or REDE, type III instable Doppler pattern).

Results. 21 fetuses with type I, 27 with type II, 14 with type III and 62 appropriately grown twins were included. Compared to the non-FGR twin, left SI was lower in type I, type II, and

type III sFGR twins ($p < 0.001$ for all). Fetuses with Type I, II and III sFGR had a longer TAPSE and MAPSE compared to the normally grown twin.

The MPI was higher in type I, II and III compared to controls. When comparing the different types of sFGR according to the UA Doppler pattern, the overall cardiac function was lower in type II compared to type I, while fetuses with type III sFGR showed an overall better performance compared to type II sFGR.

Conclusions. MC twins with sFGR had a sub-optimal cardiac function compared to the appropriately grown twins. Cardiac function was reduced in type II compared to type I while it was better in type III compared to type II.