Safety indices during fetal echocardiography at the time of first trimester scan are machine dependent

Nemescu D, Berescu A, Luca Al, Potica I, Onofriescu M.
University of Medicine and Pharmacy “Gr. T. Popa”, Iasi, Romania

Objectives
To assess the acoustic outputs, as expressed by thermal index (TI) and mechanical index (MI), during the evaluation of the foetal heart at 11+0 to 13+6 gestation weeks, with different ultrasound machines

Methods
Retrospective study
First trimester screening.
Cases examined with Voluson E8 or 730Pro scanners using 4-8 MHz transabdominal probes.

TI and MI were retrieved from the saved displays during gray mode, color flow mapping and pulsed Doppler examinations of the fetal heart and also from the ductus venosus (DV)

Results
We evaluated 551 fetal cardiac examinations, 303 (55%) performed with Voluson E8 and 248 (45%) with Voluson 730Pro ultrasound machines.

The gray-scale exam of the heart and the pulsed-wave Doppler DV assessment had TI values significantly lower for the Voluson E8 group (mean, 0.07±0.05 vs. 0.18±0.04 and 0.1±0.01 vs. 0.23±0.08, respectively).

The TI values from the Doppler examinations of the heart, either color flow (mean, 0.2±0.0) or pulsed-wave imaging (mean, 0.36±0.05), were not significantly different between the two groups.

Conclusion
The newer generation of ultrasound equipment provides lower safety indices for some examinations.