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Prediction of adverse pregnancy outcome from maternal and pregnancy characteristics in triplet pregnancies

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Introduction

Triplet pregnancies are associated with significantly increased risks of maternal and fetal morbidity compared to singleton and twin pregnancies.

The objective of the study was to assess the use of different maternal characteristics and pregnancy characteristics such as maternal age, body-mass-index (BMI) and pulsatility index (PI) of the uterine arteries (UA-PI) and chorionicity for prediction of adverse pregnancy outcome in triplet pregnancies.

Material and Methods

This was a screening study in 103 triplet pregnancies to evaluate the risk for placental insufficiency and subsequently for preeclampsia and other adverse pregnancy outcome dependent on different possible predictive factors such as maternal age, BMI, AU-PI and chorionicity

Results

Logistic regression revealed that maternal hypertension was fairly predicted by a combination of several predictors including maternal age, BMI, as well as uterine artery doppler (mean value and notching) with an area under the ROC curve of 74.7%, whereby increased maternal age was found to be the most relevant risk factor (p=0.02)..

Conclusion

While higher maternal age is a clear predictor of hypertension and PE, a model based on maternal characteristics and pregnancy characteristics could not provide a sufficient prediction model for preeclampsia

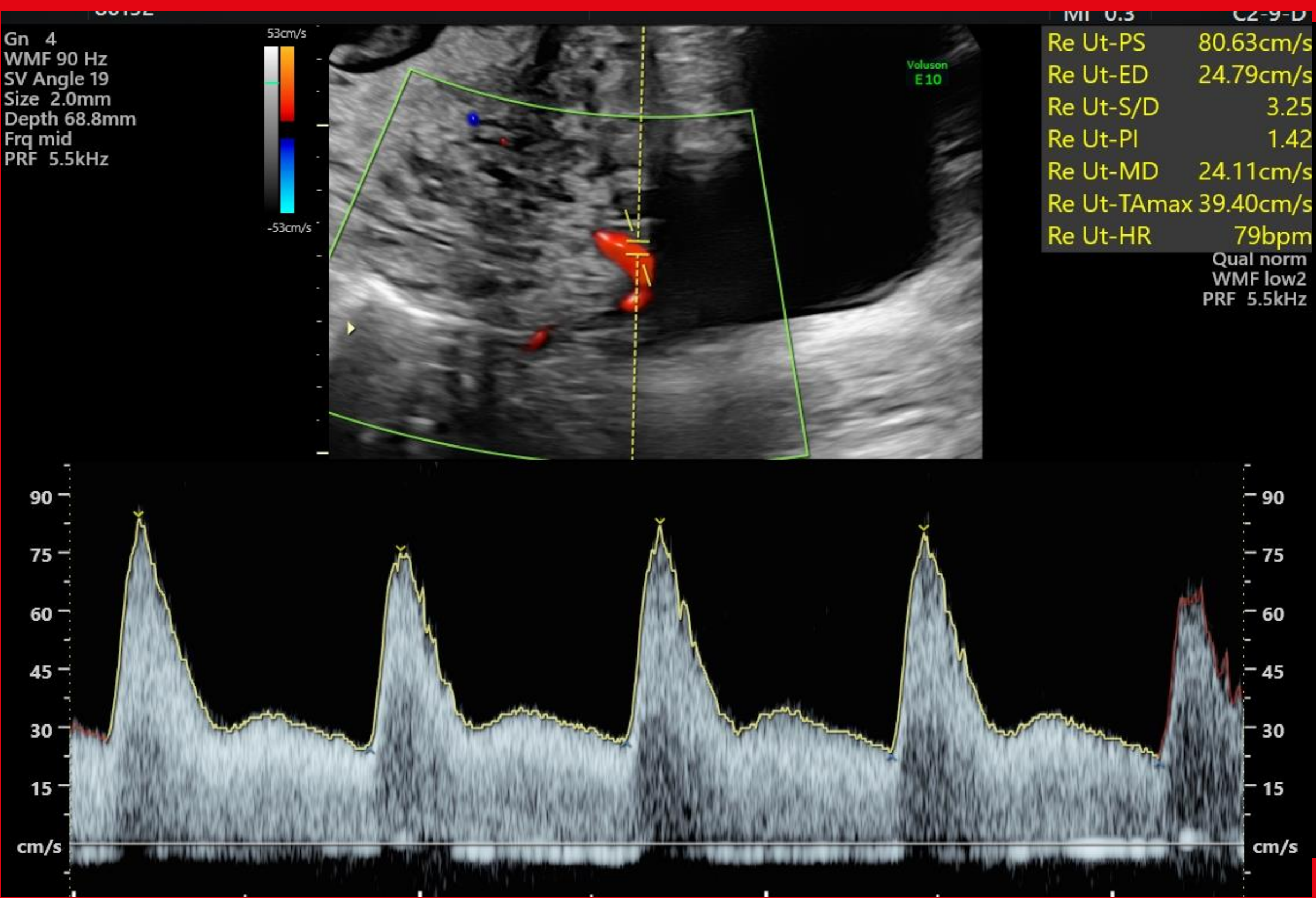


Figure 1: Uterine Artery Doppler: transabdominal measurement with hint of a notch

uterina_left_PI	0.1353	0.78 (0.61 — 0.95)	0.78 (0.65 — 0.98)	0.76 (0.54— 0.91)
uterina_right_PI	0.8482	0.73 (0.6 — 0.9)	0.73 (0.6 — 0.9)	0.74 (0.61 — 0.92)
uterina_mean_PI	0.4562	0.76 (0.64 — 0.91)	0.75 (0.66 — 0.92)	0.76 (0.59 — 0.88)
Uterine-min-PI	0.3401	0.65 (0.54 — 0.81)	0.66 (0.57 — 0.81)	0.64 (0.52 - 0.78)
Uterine_max_PI	0.4081	0.89 (0.7 — 1.01)	0.9 (0.72 — 1.01)	0.84 (0.67 — 0.99)
uterina_left_RI	0.1881	0.51 (0.44 — 0.57)	0.51 (0.46 — 0.57)	0.5 (0.39 — 0.56)
uterina_right_RI	0.8454	0.5 (0.43 — 0.55)	0.49 (0.43 — 0.55)	0.5 (0.43 — 0.56)
uterina_mean_RI	0.5727	0.5 (0.45 — 0.55)	0.5 (0.46 — 0.55)	0.5 (0.43 — 0.55)

Table 1 Uterine artery Doppler. UA-PI show moderate predictive power, while the resistance indices appear to have lower reliability.