Pre-labor estimations of delivery mode and fetal head engagement in primiparous at term

Authors: Dominic G. Iliescu, Roxana Dragusin, Maria Florea, Ciprian Patru, Rodica D. Nagy, Razvan Capitanescu, Stefania Tudorache

University of Medicine and Pharmacy Craiova, MEDGIN, University Emergency County Hospital, Craiova, Romania

Objectives
Clinical lack of fetal head engagement (FHE) in term primiparous has a controversial incidence and has been associated with labor arrest disorders.
Our objective was to analyze longitudinally the evolution of fetal head situation at term and the correlations with the delivery mode in primiparous at term.

Methods
Starting at 37GW we determined weekly in unselected primiparous the occiput position and TPU measurements: progression angle (PA), progression distance (PD), direction angle (DA) and head to perineum distance (HPD).
The evolution of these measurements was studied and compared against the station 0 cut-offs from the literature. Maternal and labor characteristics were noted.

Results
In 262 studied term primiparous the rates of FHE at any examination at term were between 3.3 – 5.7% (depending on the TPU measurement).

We did not identify a specific trendline for the US measurements at term. Moreover, the differences between vaginal and Cesarean cases were generally not significant. Analyzing only the data from the week before delivery, the relation between the US parameters and the delivery mode failed or was only poor (Figure 1).
When considering the occiput position, the analysis performs slightly better, but the correlations remain poor (AUC=0.584, 0.663, 0.671) (Figure 2).

Conclusions
Engagement rate at term was lower than any report published so far, but this is the only study that used objective US evaluation.

We could not find strong associations between US determinations at term and the delivery mode.