

Zarzoso Giménez M¹, Cuatrecasas E², García Gómez MA¹, Andreu S², Parra Hernández JA¹, Sabrià J¹, Gómez-Roig L¹, Illa M¹

¹BCNatal - Barcelona Center for Maternal-Fetal and Neonatal Medicine (Hospital Clínic and Hospital Sant Joan de Déu), Fetal iD Fetal Medicine Research Center, IDIBAPS, University of Barcelona. Centre for Biomedical Research on Rare Diseases (CIBER-ER), Barcelona, Spain

²Servei de Medicina Genètica i Molecular. Hospital Universitari Sant Joan de Déu, Barcelona, Spain.

Objective

To evaluate if quality of villus chorionic sample from the CVS depends on Crown-Rump Length (CRL), maxim diameter of gestational sack and operator skills in first trimesters miscarriages.

Methodology

- Retrospective study between 2019 and 2021.
- 147 first trimestre miscarriages diagnosed at Sant Joan de Déu (Barcelona, Spain).
- Gemelar embryos were treated as one patient.
- CVS were obtained either by expert operators (EO), defined as specialized physician, and non-expert operator (NEO), mainly resident physician.
- Exclusion criteria was second trimester stillbirth according to CRL.
- Optimal sample (OS) have not cell contamination and weight sample was more than 10mg.

Results

- Maternal age was 36 yo (IQR 7.75) with a gestational age at enrollment of 10+1w
- OS was obtained in 49% of the patients, and was related with higher CRL and gestational sack diameter (CRL: 12 vs 15 (IQR 16), $p=0.015$; Sack: 25 vs 36 (IQR 18.5), $p=0.049$)
- In comparison to NEO, EO presented higher percentage of OS (66% vs 35%, $p<0.001$), with no differences neither in CRL and sack diameter (Figure 1).
- In our regression model, 20mm of CRL and 33mm of maxim diameter of gestational sack had the highest sensitivity and specificity for OS – S 40% and E 82% for CRL; S 62% and E 79% for gestational sack (Figure 2)

Figure 1 (Plot with comparison between EO and NEO in terms of CRL and Sack)

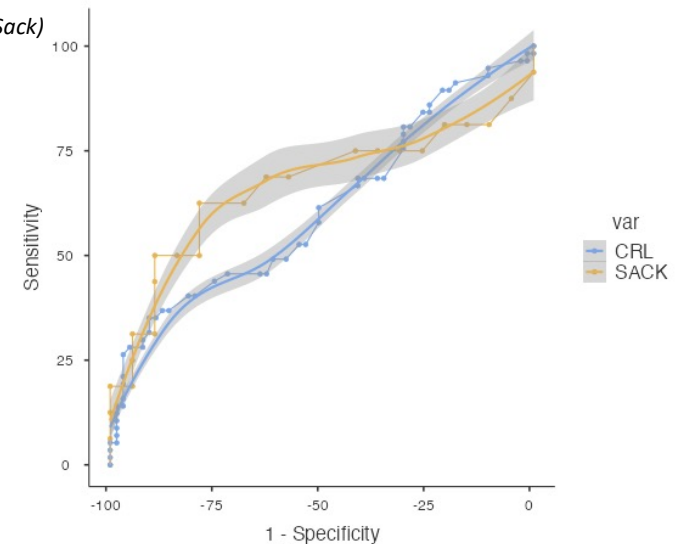
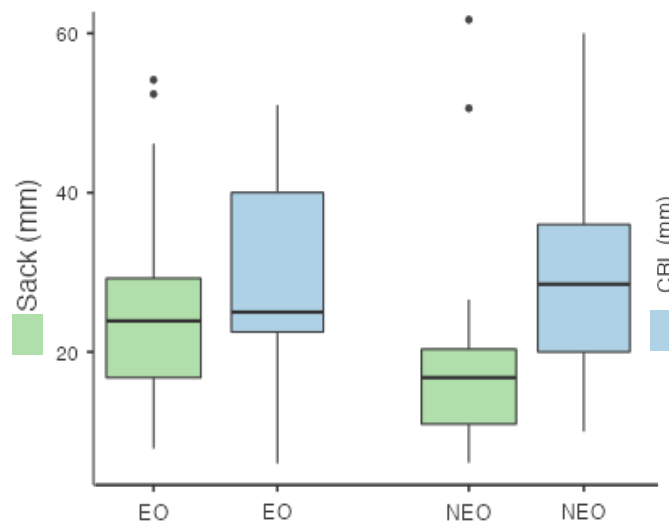


Figure 2 (Roc curve of CRL and sack for our regression model)

Conclusions

1. An expert operator is related with higher percentage of optimal sample in CVS than a non-expert operator.
2. Higher CRL and sack were related with higher percentage of optimal sample.
3. 33mm of gestational sack and 20mm of CRL appear to be good cut-points in our model.