Prediction of Cesarean Section prior to term labor induction by means of fetal and perineal sonographic markers

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INTRODUCTION and OBJECTIVE

Labor induction is one of the leading causes of obstetric admission. Most women experience unpleasant uncertainty and anxiety about the possible results. Knowledge about the possibility of success might be applied to guide the management and discard unnecessary intervention.

The aim of this study was to evaluate a simple clinical and sonographic model for the prediction of cesarean section (CS), for failure to progress (FP) or intrapartum fetal compromise (IFC) prior to labor induction.

MATERIAL AND METHODS

We designed an observational prospective study that included normal singleton patients with unruptured amniotic membranes admitted to the Maternity unit of La Fe Hospital for labor induction.

Clinical and ultrasonographic variables were collected at admission. Regarding CS due to **FP** ultrasonographic variables responded to the two components of the birth process:

a) The passenger and its position in relation to the pelvis, represented by the estimated fetal weight (**EFW**) and the presence of an occiput position (**OP**).

b) The passage, represented by the angle of descent (**AOD**), and the cervical length (**CL**).

Regarding **IFC**, the possibility of CS was evaluated by means of the cerebroplacental ratio (**CPR**), which represented the relation between fetal demands and placental supply.

RESULTS

Preliminary results suggest that prior to induction, information provided by ultrasonographic examination including **EFW, OP, AOD, CL** and **CPR** combined with **clinical** data (mother age, weight and height, smoking habits and race) could be used to predict the probability of:

a) CS for FP (**AUC 0.85 p<0.0001**)

b) CS for IFC (**AUC 0.74 p<0.0001 VPN: 91.67%**).

CONCLUSION

Prediction of CS prior to labor induction may be done using clinical data combined with fetal and perineal ultrasound.