

338 Cervical length in asymptomatic twin pregnancies: prospective multicenter comparison of predictive indicators

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OBJECTIVE: To determine whether cervical shortening between 22 and 27 weeks of gestation predicts spontaneous preterm delivery before 34 weeks better than a single cervical length (CL) measurement at 22 or 27 weeks in asymptomatic twins.

STUDY DESIGN: Prospective 13-center study over a 2-year-period re-analysed. CL was measured in 120 consecutive asymptomatic twin pregnancies during their routine ultrasound examination at 22 (21-23) and 27 (26-28) weeks. The results of these measurements were neither communicated to the patients nor used for their management. The area under the ROC curve was calculated for CL at 22 weeks, CL at 27 weeks, the percentage of cervical shortening between 22 and 27 weeks, and the cutoff point providing the best diagnostic performance, sensitivity and specificity for predicting spontaneous delivery <34 weeks was defined for each. Sensitivity, specificity, positive and negative likelihood ratios (LR+ and LR-) were then calculated with their 95% confidence intervals.

RESULTS: The study included 120 patients; four were excluded from the analysis because of medically indicated delivery before 34 weeks. Of the 116 women, 13 gave birth before 34 weeks (11.2%). The areas under the ROC curve were 0.67 for CL at 22 weeks, 0.75 for CL at 27 weeks, and 0.57 for the change in CL from 22 to 27 weeks. The three ROC curves obtained differed significantly at the 0.05 level (p-value = 0.027). Nonetheless, the ad hoc tests performed do not show a significant difference between the ROC curves compared pairwise. The best cutoff points were CL ≤ 35 mm at 22 weeks, CL ≤ 25 mm at 27 weeks, and cervical shortening of 20%. For equal sensitivity values (53.9%) for each, specificity for a CL ≤ 25 mm at 27 weeks was 87.5 (95% CI: 81-94), significantly better than for the other indicators.

CONCLUSION: The predictive performance of the cervical shortening does not differ from that of the measurement at either 22 or 27 weeks. However, because of its high specificity, CL ≤ 25 mm at 27 weeks appeared to be the most useful indicator for predicting preterm delivery before 34 weeks in this population.

Diagnostic test	Sensitivity % [95% CI]	Specificity % [95% CI]	LR+ [95% CI]	LR- [95% CI]
Cervical length ≤ 35 mm at 22 weeks	39 [12 – 66]	71 [62 – 80]	1.3 [0.6 – 2.8]	0.9 [0.6 – 1.4]
Cervical length ≤ 25 mm at 27 weeks	54 [27 – 81]	87 [81 – 94]	4.3 [2.1 – 8.7]	0.6 [0.3 – 0.9]
Relative shortening ≥ 20% Between 22 and 27 weeks	46 [19 – 73]	71 [62 – 80]	1.6 [0.8 – 3.1]	0.8 [0.4 – 1.3]

CI: confidence interval, LR+: Positive likelihood ratio, LR-: Negative likelihood ratio

339 Prediction of outcome in twin pregnancy with first and second trimester ultrasound

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OBJECTIVE: To establish if first or second trimester biometry (11+0 to 21+6 weeks) is a useful adjunct in the prediction of adverse perinatal outcomes in twin pregnancy.

STUDY DESIGN: A consecutive cohort of 1028 unselected twin pregnancies were enrolled for the Evaluation of Sonographic Predictors of Restricted growth in Twins (ESPRiT) study, a multicenter prospective study conducted at 8 academic perinatal centers in Ireland. Outcome data was recorded for 1001 twin pairs that completed the study {200 monochorionic (MC) and 801 dichorionic (DC)}. Biometric parameters obtained between 11 and 22 weeks were evaluated as predictors of a composite of adverse perinatal outcomes (CO). These included mortality, hypoxic ischemic encephalopathy, periventricular leukomalacia, necrotizing enterocolitis, respiratory distress and sepsis. Preterm delivery (PTD) and birthweight discordance greater than 18% (18% BW) were also investigated. Outcomes were adjusted for chorionicity and gestational age using Cox Proportional Hazards regression.

RESULTS: Differences in CRL of 10% or 20% were not predictive of adverse perinatal outcome in either DC or MC twins. Between 14 and 22 weeks, an abdominal circumference (AC) difference of more than 10% was the most useful predictor for adverse perinatal outcome, PTD and 18% or more BW discordance in both DC and MC twins. The strongest correlation was observed for biometry obtained between 18 and 22 weeks (Table).

CONCLUSION: While first trimester biometry was not useful for predicting adverse outcome, biometry in the early second trimester can successfully identify twin pregnancies at increased risk of poor perinatal outcome. Intertwin AC difference of greater than 10% between 14 and 22 weeks gestation was the best individual predictor of perinatal risk in both monochorionic and dichorionic twins. Sonographic biometry in the early second trimester should therefore be utilized to establish perinatal risk, thus allowing prenatal care to be tailored accordingly.