

(EP12.07) - Cervical elastography in twin pregnancies: identification of predictive cut-off values for preterm premature rupture of membranes

C. Grelloni, S. R. Giannubilo, N. Montik, A. Schiavi, A. Ciavattini

Gynecologic Section, Department of Odontostomatologic and Specialized Clinical Sciences, Polytechnic University of Marche, Ancona (Italy)

Introduction

To identify potential E-Cervix™ (Samsung Medison Co, Figure 1) elastographic cut-off values for early risk stratification of preterm premature rupture of membranes (pPROM) in twin pregnancies.

Methods

In this prospective observational study, 119 asymptomatic twin pregnancies at 10-36 weeks' gestation underwent transvaginal E-Cervix™ assessment. Cervical length (CL) and elastographic parameters - including cervical tissue heterogeneity (ECI), hardness ratio (HR), internal os strain (IOS), and external os strain (EOS) - were recorded, together with pregnancy outcomes.

Results

21/119 (17.6%) patients developed pPROM, of whom 16/21 (76.1%) delivered before 35 weeks. E-Cervix™ parameters were adjusted for gestational age to account for physiological cervical softening. Gestational age-adjusted IOS (IOS-resid, Figure 2) showed the best predictive performance (AUC 0.633; specificity 83.7%). An IOS-resid value >0.54, corresponding to 5.4% above the expected value for gestational age, was significantly associated with an increased risk of pPROM.

Conclusion

Cervical elastography, particularly gestational age-adjusted IOS, may represent a clinically relevant parameter for the early identification of twin pregnancies at increased risk of pPROM. Further studies are needed to integrate E-Cervix™ and CL assessment to improve early risk stratification.

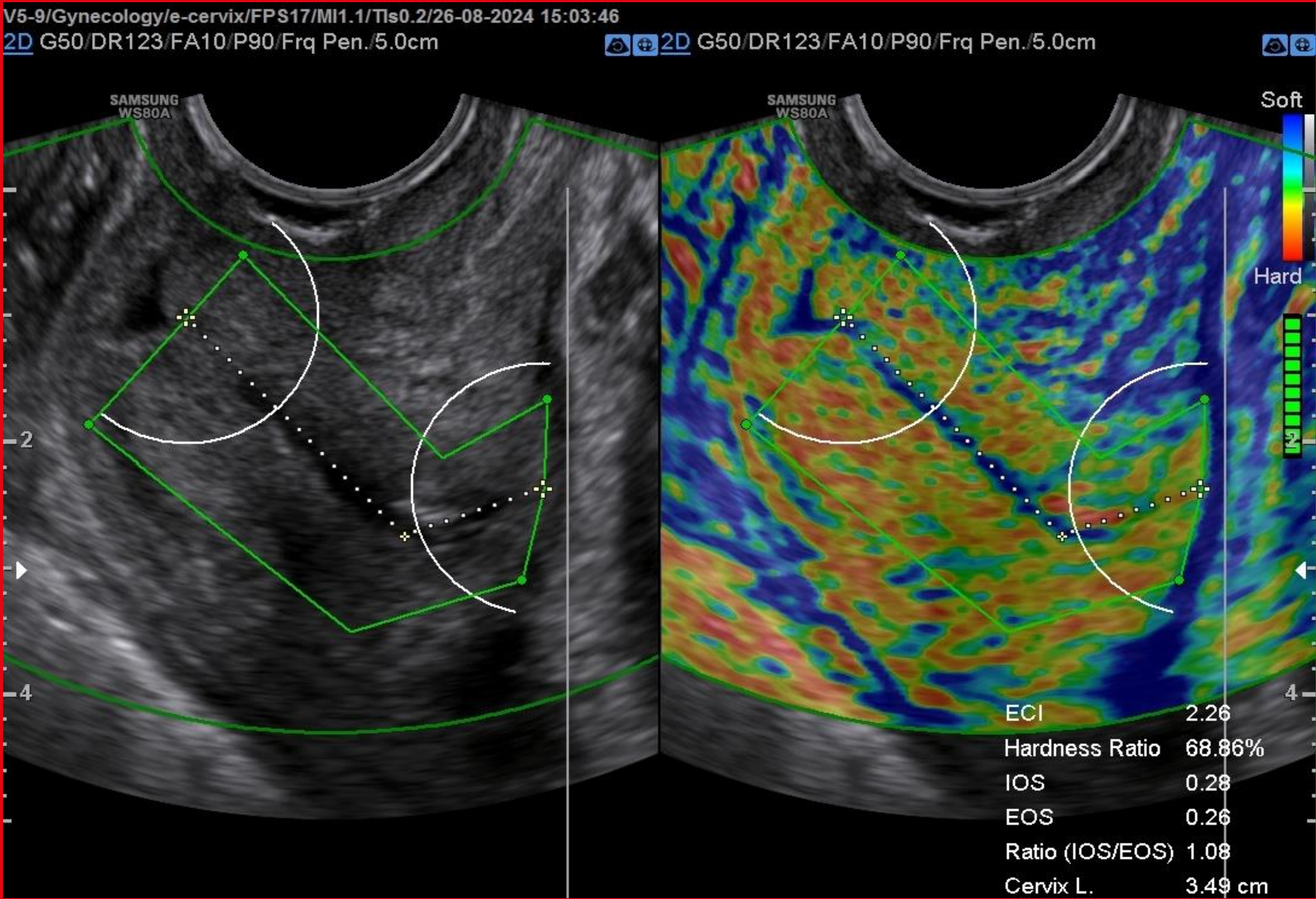


Figure 1. Cervical elastography with E-Cervix™

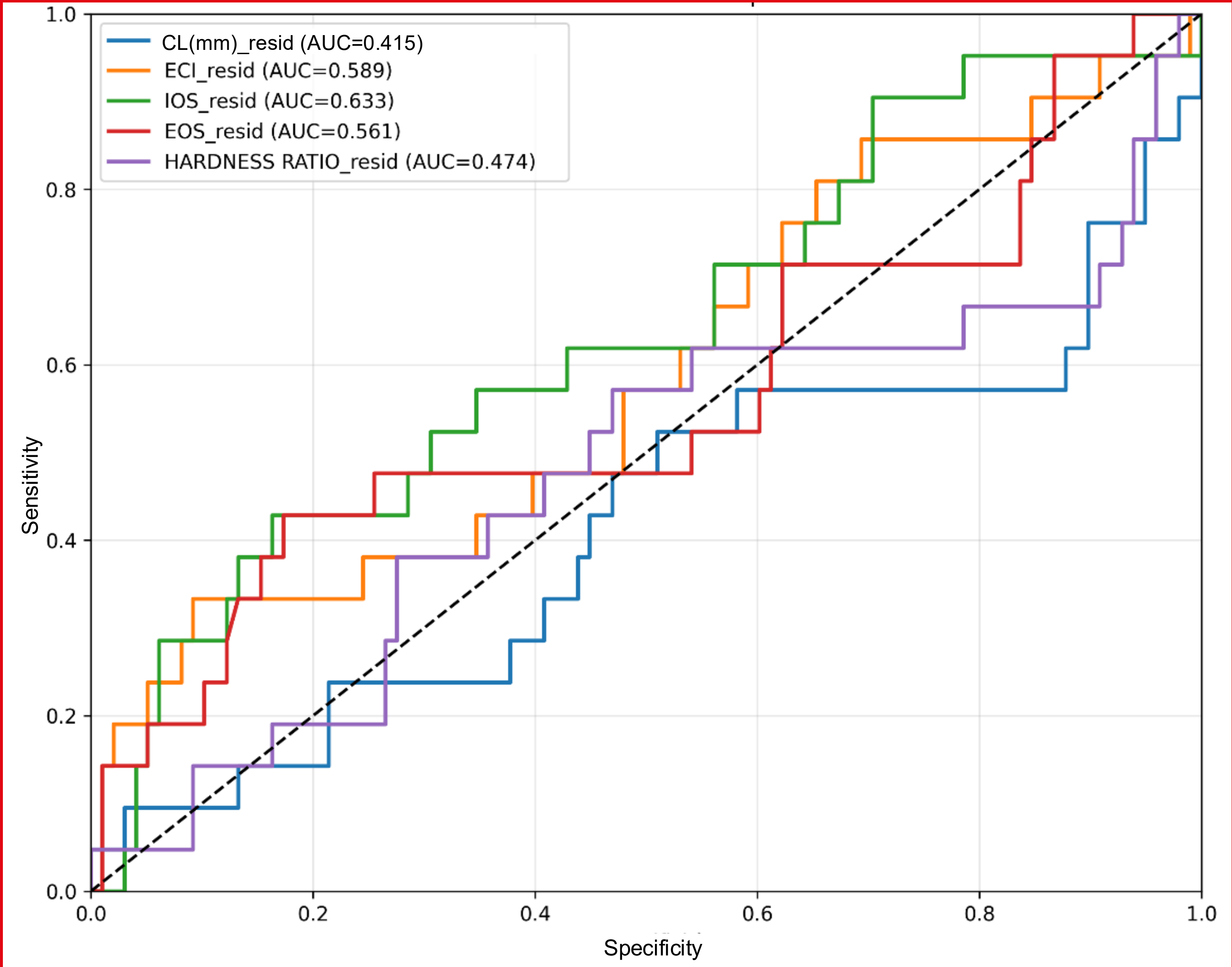


Figure 2. ROC curves of gestational age-adjusted E-Cervix™ parameters