P-0240 | POSTER | Mechanisms for preterm labor and fetal injury

PLACENTAL ALPHA MICROGLOBULIN-1 IN COMBINATION WITH TRANSVAGINAL ULTRASOUND FOR PREDICTION OF PRETERM BIRTH

Heverhagen, A.
Inselspital Bern, Bern, Switzerland

Abstract:
Objective: In patients with symptoms of PTL cervical length measurement by transvaginal ultrasound (CL) alone has limited value regarding the prediction of preterm birth. Placental-alpha-microglobulin-1 (PAMG-1) is a protein that can be found in high concentrations in amniotic fluid and lower concentrations in vaginal secretions of patients with signs of preterm labor without rupture of membranes. This study aims to evaluate the clinical value of a novel point-of-care PAMG-1 test (PartoSure) in patients with a short cervix.
Study design: Patients with symptoms of preterm labor between 24 and 37 weeks of gestation were included into the study group. Gestational age-matched asymptomatic controls were included. Measurement of CL, a vaginal swab for the PAMG-1 test, as well as a vaginal microbiological swab, were obtained. The PAMG-1 test was performed according to the manufacturer's recommendations. Practitioners were blind to the test's results. Primary endpoint was time to delivery. Analysis of patient treatment was also conducted.
Results: While 76 symptomatic patients were recruited, 12 (17%) were excluded due to either insufficient data or failure to meet the inclusion criteria. While 68 asymptomatic patients (control group) were recruited, 13 (18%) were excluded for the same reasons listed above. The PAMG-1 test had a 100% negative predictive value (NPV) and a 98% specificity in this group. For symptomatic patients, the PAMG-1 test had a positive predictive value (PPV) of 100% (p<.05 using Fischer's exact test, compared to CL<25 mm, which had a PPV of 15%) and an NPV 94% for predicting delivery within 7 days. In the 31 (48%) symptomatic patients with CL between 15 and 30 mm, the PAMG-1 test had a PPV of 100% and an NPV of 97% for predicting delivery within 7 days. While only 9% of symptomatic patients delivered within 7 days, 83% were hospitalized, 75% received corticosteroids, and 59% received tocolytic therapy.
Conclusion: The novel bedside PAMG-1 test has a higher positive predictive value compared to other commercially available bedside tests for preterm birth such as fetal fibronectin or IGFBP-1, as well as CL alone. The test's NPV is highest (97%) when used in combination with cervical length measurement to predict imminent spontaneous delivery in patients with symptoms of preterm birth. The high rate of unnecessary use of corticosteroids, tocolytics and hospitalization in our study suggests a significant opportunity for cost reductions and patient safety improvements via the combinatory use of the PAMG-1 test and cervical length measurement.