THE U.S. RANDOMIZED CLINICAL TRIAL OF INTRAPARTUM FETAL PULSE OXIMETRY: SUBANALYSIS OF INCREASED DYSTOCIA AMONG PATIENTS MONITORED WITH FETAL PULSE OXIMETRY

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Objective: The U.S. randomized controlled trial of fetal pulse oximetry (FPO) showed a reduction in cesarean delivery (CD) for non-reassuring fetal status (NRFS) but an increase in CD for dystocia. Our objective was to further evaluate the data to better understand the observed increase in dystocia.

Study Design: Term patients with NRFS by electronic fetal monitoring (EFM) were randomized to receive EFM alone or EFM+FPO. The CD rates for NRFS and dystocia were compared for each group.

Results: 1011 patients were randomized, 502 in the EFM and 509 in the EFM+FPO groups. Relevant pre-randomization variables were balanced, except for more labor inductions in the EFM+FPO group (56% vs 49%, P = 0.02). There was a 9% CD rate for dystocia in the EFM group and 18% for the EFM+FPO group (P < 0.0001). Logistic regression analysis showed an independent effect of assignment to the EFM+FPO group. Clinician bias affecting CD indications was not supported by the presence of secondary consequences of mislabeling. Applying retrospective definitions for dystocia, blinded partogram analysis showed appropriate intervention in the CD for dystocia groups. Kaplan-Meier analysis showed no evidence of slowing labor by the FPO sensor. Patients with dystocia had longer labors in both groups. Finally, non-reassuring EFM patterns, especially severe variable decelerations, were dramatically more prevalent among the EFM+FPO CD for dystocia group than in any other CD groups.

Conclusions: The occurrence of mild to moderate non-reassuring EFM patterns, especially variable decelerations, may be an unappreciated early marker for dystocia. Improved fetal assessment by the addition of FPO allows safe continuation of labor unmasking underlying dystocia. Prospective study of dystocia in patients monitored with FPO will be necessary to confirm this conclusion.