ABSTRACT

Background: Fetal fibronectin (fFN) is a biomarker used to predict preterm delivery. The manufacturers of this screening tool discourage its use after transvaginal ultrasound (TVU), sterile vaginal examination (SVE), or coitus due to potential for inaccurate results.

Objective: The purpose of this study was to determine if recent cervical manipulation via TVU, SVE, or coitus affects the accuracy of fFN results.

Study Design: This study followed the guidelines for Meta-analysis of Observational Studies in Epidemiology. Electronic databases were searched from inception until June 2019. We included all cohort studies that provided fFN results after TVU, SVE, and/or coitus. The primary outcome was agreement between pre- and post-manipulation swabs, estimated using proportion agreement and kappa (κ) statistics with 95% confidence intervals (CI). Secondary outcomes included frequency in which the fFN result changed after cervical manipulation and percentage of discordant pairs. Baseline fFN swabs were not obtained in studies examining coitus; therefore, the results of these articles were examined separately. Outcome data was combined to estimate relative risk of a positive qualitative fFN result after coitus and differences in concentration of quantitative fFN.

Results: Of 807 studies identified, six were included. Three studies assessed the effect of TVU (n=346 specimen pairs), two of SVE (n=122 specimen pairs), and two of coitus (n=262 specimen pairs) on fFN results, with one study assessing the effect of more than one intervention. The proportion agreement between specimen pairs before and after TVU and SVE was 93.4% (κ 0.69, 95% CI 0.57-0.81) and 88.5% (κ 0.69, 95% CI 0.54-0.84), respectively. For both TVU and SVE, discordance with a positive pre-intervention fFN and negative post-intervention fFN
occurred more frequently than the converse. Patients reporting coitus within 24-48 hours were more likely to have a positive fFN result than controls (39.7% vs. 7.1%, RR 5.6; 95% CI, 3.0-10.6).

**Conclusion:** Cervical manipulation via TVU or SVE does not significantly affect fFN results; therefore, its use after these exposures is clinically acceptable. Conversely, the use of fFN in the setting of recent coitus should continue to be discouraged.