

# Population Health *Matters*

## Preterm Birth and the Controversy Over Universal Cervical Length Screenings

Preterm birth (PTB), defined as birth before 37 weeks gestation, is a major population health problem. It is the number one cause of neonatal morbidity and mortality in developed countries--bearing significant societal healthcare costs due to short-term consequences and complications.<sup>1</sup> It is a source of concern for policymakers that PTB accounts for 12% of all births in the United States, a higher rate than other developed nations.<sup>2</sup> PTB preventative strategies include transvaginal ultrasound (TVU) screening and progesterone administration.<sup>3</sup>

Though the exact mechanism of action of progesterone is not clear, it is thought to provide an anti-inflammatory effect and counteract the local decrease in progesterone levels to decrease the likelihood of PTB.

In 2012, the Society for Maternal-Fetal Medicine (SMFM) published recommendations and the American College of Obstetricians and Gynecologists (ACOG) published an opinion statement relevant to progesterone to reduce PTB.<sup>4,5</sup> Though a number of studies were cited, evidence is largely supported by two large trials that found vaginal progesterone reduced PTB compared to placebo. In 2007, Fonseca et al. found that a vaginal progesterone suppository (200mg each night) reduced spontaneous PTB by 44% (19% vs. 34% in the placebo group).<sup>6</sup> The PREGNANT trial (The Effect of Vaginal Progesterone Administration in the Prevention of Preterm Birth in

Women With a Short Cervix), a more recent randomized multi-center trial, demonstrated the efficacy and safety of a vaginal progesterone gel (90mg daily) in reducing PTB risk and associated neonatal complications. Results indicated that the vaginal progesterone gel was associated with a 45% reduction in PTB before 33 weeks (9% treatment vs. 16% control) and was associated with a 43% significant reduction in composite neonatal morbidity and mortality (8% treatment vs. 14% control).<sup>7</sup>

The evolving evidence regarding progesterone has stimulated controversy as to whether all pregnant women should receive a TVU screening to detect short cervix (i.e., universal screening), as opposed to screening only women determined by their physician to be at high risk for PTB. Since high risk is typically defined based on history of prior PTB, screening only these women would leave out two major cohorts of the pregnant population: 1) those who are pregnant for the first time and have a short cervix, and 2) those who have a short cervix despite history of full-term pregnancies. Proponents of universal screening argue that it makes sense to support this strategy since evidence supports the benefit of progesterone in women found to have short cervix.<sup>4</sup> On the other hand, opponents of universal screening contend that: 1) there is a lack of efficacy data specifically on the strategy of universal TVU screening followed by vaginal progesterone; 2) the

implementation of proper TVU screening technique is required in order to ensure accurate results; 3) certain geographic areas lack sufficient availability of TVU screening; 4) in certain women, short cervix can be identified without TVU; and 5) there is the possibility of differing results when TVU screening is completed in practice versus within a clinical trial.<sup>4</sup> SMFM recommendations state that, though there is currently insufficient evidence to support universal screening, it is a reasonable practice for individual physicians to choose.

In summary, while many clinicians currently support a strategy of universal TVU screening followed by progesterone in women detected to have short cervix, this remains an acceptable but controversial practice. Until more evidence is available, the issue will persist as a topic of clinical debate. ■

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**Elizabeth Mearns**

*Doctor of Pharmacy Student<sup>1</sup>*

**Laura T. Pizzi, PharmD, MPH<sup>1</sup>**

**Jason K. Baxter, MD, MSCP<sup>2</sup>**

**Vincenzo Berghella, MD<sup>2</sup>**

<sup>1</sup> Jefferson School of Pharmacy, Thomas Jefferson University, Philadelphia, PA

<sup>2</sup> Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, Jefferson Medical College of Thomas Jefferson University, Philadelphia, PA

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