

Stephen S Crane, MD¹, Anand Kantak, MD², Elena Rossi, MD²,
Robin Naples, MSW, LISW¹, Cindy K Grand, NNP², and John McBride, MD²

¹Department of Maternal Fetal Medicine and ²Department of Pediatrics, Akron Children's Hospital, Akron, Ohio, United States

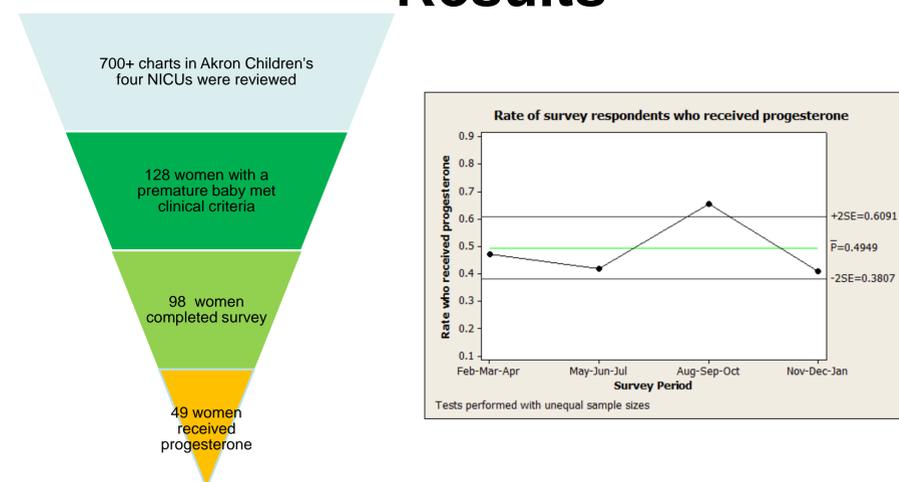
Introduction

- Preterm birth is the leading cause of neonatal morbidity and mortality in the United States.
 - Rate of preterm birth peaked at 12.8% in 2006 and has decreased to 11.7% in 2011¹.
- Progesterone supplementation has been shown to decrease risk of recurrent preterm birth by 35-45% in patients with a prior history of preterm birth and current singleton pregnancy^{2,3}.
 - In spite of evidence-based recommendations made by ACOG and SMFM, progesterone supplementation to at-risk patients has not achieved universal practice status.
- **The objective of this study was to assess the rate of women with recurrent preterm birth being offered, receiving, and adhering to progesterone supplementation guidelines and to ascertain reasons for failure to follow published guidelines in our community.**

Methods

- Prospective observational performance improvement study performed in Akron Children's Hospital's four NICUs in Northeast Ohio.
- Charts were reviewed sequentially for 1 year to identify mothers of premature singleton neonates born at less than 37 weeks' gestation who had a prior history of preterm birth or prior history of stillbirth after 15 weeks.
- After informed consent was obtained, a neonatal nurse practitioner or neonatologist performed an 18-question survey through patient interview and chart abstraction to determine:
 - If progesterone supplementation was offered;
 - Acceptance of progesterone supplementation;
 - Compliance with progesterone supplementation;
 - Reasons why progesterone was declined.
- IRB approval was obtained for this performance improvement project

Results



- 9.6 weeks was average for first prenatal visit
 - There was no significant difference in gravidity, parity or gestational age at first visit in women who did or did not receive progesterone
- 61/98 (62.2%) had been offered progesterone
 - 50/61 (82%) offered progesterone accepted treatment
 - 11/61 (18%) mothers offered progesterone declined.
 - Reasons cited for declining progesterone included cost (n=2), inconvenience (n=1), perceived side effects to mother (n=2), perceived side effects to fetus (n=1)
- 49/98 (50%) did not receive progesterone
 - 37/49 (75.5%) were not offered progesterone
 - 33/37 (89%) of mothers not offered progesterone reported their care provider was aware of their prior preterm delivery
- Only 49/98 (50%) actually received progesterone
 - 9/49 (18.4%) patients reported compliance failure, missing at least one dose of progesterone
- Mean gestational age at delivery in women who accepted progesterone was 31.8 weeks compared to 29.9 weeks for women who did not (p=0.07).

Conclusions

- Despite evidence-based ACOG and SMFM recommendations, only 50% of women with recurrent preterm birth received progesterone
 - 9/49 (18.4%) patients reported compliance failure
- More concerning is that 75.5% of the women with recurrent preterm birth who did not receive progesterone reported that their caregiver did not offer it
 - 89.2% of women not offered progesterone reported that their care provider was aware of their prior preterm births yet did not offer progesterone per guidelines
- Acceptance rate of progesterone was high if offered
 - Only 18% of women offered progesterone declined
- Improved education of caregivers regarding indications for progesterone and providing them with tools to improve compliance are needed
- Empowerment of child-bearing aged women through education regarding risks of preterm birth and preventive interventions including progesterone and cervical length screening is needed
 - Education of women during their neonates' stay in the NICU may be beneficial in improving compliance with guidelines in future pregnancies.

Bibliography

1. Iams JD. Prevention of preterm parturition. N Engl J Med 2014;370:254-61.
2. ACOG practice bulletin no. 130: prediction and prevention of preterm birth. Obstet Gynecol 2012;120:963-73.
3. Society for Maternal-Fetal Medicine Publications Committee. Progesterone and preterm birth prevention: translating clinical trials data into clinical practice. Am J Obstet Gynecol 2012;206:376-386.

The project described was supported by Funding Opportunity Number CMS-1c1-12-0001 from CMS, Center for Medicare and Medicaid Innovation. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of HHS or any of its agencies.