Smoking During Pregnancy Modifies the Effect Of 17P on Subsequent Preterm Birth: A 2012-2015 SC PRAMS Analysis

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17 Alpha-Hydroxyprogesterone Caproate (17P)

• Prescribed to pregnant women with a history of preterm birth (PTB) to prevent a subsequent PTB\textsuperscript{1,2}

• Heyborne et al (2017) study\textsuperscript{3}
  • Identified a modifying effect of smoking during pregnancy on the effectiveness of 17P in reducing subsequent PTB
  • Done retrospectively from a randomized control trial on 17P effectiveness
17P on SC PRAMS Phase 7

• Phase 7: 2012-2015

• Only information available about 17P receipt, since done in outpatient/at home setting

34. During your most recent pregnancy, did a doctor, nurse, or other health care worker try to keep your new baby from being born too early by giving you a series of weekly shots of a medicine called Progesterone, Makena®, or 17P (17 alpha-hydroxyprogesterone)?

☐ No
☐ Yes
☐ I don’t know
Do population-based survey data reflect the modifying effect of smoking during pregnancy on 17P effectiveness for reducing subsequent PTB in SC?
Figure 1. Sample inclusions
Among those with a PPTB

17P receipt → Subsequent PTB

Smoked during last three months of pregnancy → Did not smoke during last three months of pregnancy
Among those with a PPTB,

- 26% (±8%) reported receiving 17P
- 15% (±7%) reported smoking during pregnancy
- 14% (±8%) of those who did not receive 17P smoked during the last 3 months of pregnancy
- 4% (±3%) of those who received 17P smoked during the last 3 months of pregnancy
Smoking during pregnancy was significantly associated with subsequent PTB among those who received 17P, but not among those who did not receive 17P.

<table>
<thead>
<tr>
<th>Association</th>
<th>Chi-square p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among those who did not receive 17P, smoking*subsequent PTB</td>
<td>0.8106</td>
</tr>
<tr>
<td>Among those who did receive 17P, smoking*subsequent PTB</td>
<td>&lt;0.0001*</td>
</tr>
</tbody>
</table>

Smoking during pregnancy may modify the association between 17P and subsequent PTB.
Limitations

• Small sample sizes in strata

• Lack of adjustment for potential confounders

• Self-reported 17P receipt and smoking during pregnancy
These findings reveal...

• Further, more complex investigation into the effectiveness of 17P is needed

• The importance of incorporating smoking cessation programs into both family planning and prenatal care settings
References


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*Impact of Pregnancy Intention on Maternal and Infant Health*

Danielle Stevens, PhD (c)
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Medical University of South Carolina

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