



## The association of different progesterone preparations with preterm birth prevention

Krispin E, Chen R, Hadar E, Wiznitzer A, Kaplan B

Helen Schneider Hospital for Women, Rabin Medical Center, Petah Tikva, Israel

### Objective

Different progesterone treatments are available for preterm birth prevention. We aimed to compare commonly available preparations.

### Methods

A retrospective cohort study of all women treated with progesterone to prevent preterm birth and delivered in a tertiary medical center. Four progesterone preparations were compared: Vaginal Endometrin 100mg twice daily, Vaginal Crinone 8%gel 90mg daily, Vaginal Utrogestan 200mg daily and Intramuscular 17 $\alpha$ -hydroxyprogesterone caproate (17-OHPC) 250mg weekly. All women were considered at risk for preterm birth according to: prior preterm birth, prior premature rupture of membranes or cervical length below 25mm measured during the second trimester. Significant maternal morbidity, pregnancy achieved by artificial reproductive technique and cerclage placement were excluded. Primary outcome was the rate of preterm birth prior to 37 weeks of gestation.

### Results

Overall, 422 women were allocated to four study groups according to progesterone preparation: Endometrin 175(41.5%), Crinone 73(17.3%), Utrogestan 154(36.5%) and 17-OHPC 20(4.7%). Rates of preterm birth prior to 37 weeks of gestation were lowest on the Endometrin treatment group (12.6% vs. 20.5%, 17.5%, and 35% in the rest,  $p=0.05$ ). Multivariate analysis revealed that the progesterone preparation was associated with preterm birth prior to 37 gestational weeks (LR=8.3,  $p=0.004$ ). The need for maternal red blood cells transfusion was significantly higher in the Endometrin subgroup (4% vs. 0 in all others,  $p=0.018$ ). This finding remained significant after adjustment to potential confounders (LR 16.44,  $p<0.001$ ). Neonatal outcomes did not differ between groups.

### Conclusion

Different progesterone preparations prescribed to high risk patients may possess different efficacy in preventing preterm delivery prior to 37 weeks of gestation.