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Testosterone, androstenedione and dehydroepiandrosterone concentrations in pregnant Spanish Purebred mare

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ABSTRACT

Androgens modulate maternal ovarian activity, embryo implantation and correct placental development. The objective of this study was to establish reference values for testosterone (T), androstenedione (A_4) and dehydroepiandrosterone (DHEA) concentrations in pregnant mares. A total of 30 healthy Spanish Purebred mares with an age range of 9.33 ± 3.31 years, were studied during the 11 months of gestation. T, A_4 and DHEA concentrations were determined using EIA validated specifically for equines. T increased in the 2nd and 3rd month ($P < 0.05$), showing a plateau between the 4th and 6th month, decreased from the 7th to the 9th month ($P < 0.05$) and increased in the 10th month ($P < 0.05$), reaching the maximum value in the last month of pregnancy ($P < 0.05$). A_4 increased in the 2nd month ($P < 0.05$), reaching the maximum value in the 3rd month ($P < 0.05$), decreased in the 4th month, increasing in the 5th and 6th month ($P < 0.05$). From the 7th month the average values decreased until reaching the minimum at the end of gestation. DHEA progressively increased from the 1st to the 5th month, at which time the maximum mean value was reached ($P < 0.05$), after a decrease in the 6th and 7th month occurred ($P < 0.05$), reaching the minimum value in the last month of gestation. T, A_4 and DHEA were positive and significantly correlated ($P < 0.05$). The androgens analyzed in this study can be used as predictive markers of pregnancy in the mare.

Keywords*:* androstenedione; dehydroepiandrosterone; pregnant mare; testosterone