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Sequential concentrations of placental growth factor and haptoglobin, and their relation to oestrone sulphate and progesterone in pregnant Spanish Purebred mare

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ABSTRACT

The objectives of this study were to establish reference values for serum concentrations of placental growth factor (PIGF) and haptoglobin (Hp), and to analyze whether the levels of oestrone sulphate (E₁S) and progesterone (P₄) are physiologically involved in the dynamic modifications of the above parameters in pregnant mares. A total of 30 healthy Spanish Purebred mares ranging in age 9.33 ± 3.31 years were studied during the 11 months of gestation. Serum concentrations of PIGF were detected by EIA, Hp using commercial Phase Haptoglobin assay and E₁S and P₄ levels through RIA. The serum concentrations of PIGF ranged between 31.70 and 223.60 ng/mL, with a mean value of 57.64 ± 18.05 ng/mL. Serum PIGF levels increased significantly during the 1st and 2nd months, reaching the maximum value in the 3rd month and the minimum value in the 10th month. Hp concentrations increased progressively and significantly from the 5th until the 10th month of gestation ($P < 0.05$), decreasing in the 11th month of pregnancy. E₁S increased significantly from the 3rd until the 7th month, decreasing progressively towards the end of gestation. P₄ increased significantly in the 3rd and 4th month and decreased significantly in the 6th and 7th ($P < 0.05$), with variable oscillations during last months of pregnancy. PIGF and Hp were significantly and negatively correlated ($r = -0.27$; $P < 0.05$). In the healthy mare, PIGF and Hp act asynchronously and independent of steroid E₁S and P₄.

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