

Bone markers in pregnant Haflinger mares – A trimestral evaluation.

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Introduction Pregnancy is associated with various physiological changes that essentially affect musculoskeletal conditions in the mare. However, the influence of pregnancy on equine bone metabolism has not been studied to great detail. Aim of this study was to evaluate the effect of pregnancy on bone turnover markers in clinically normal lactating mares.

Materials and Methods Venous blood samples were collected three-times from 17 multiparous lactating Haflinger mares, aged four to 18 years, during the first (T1), second (T2) and third (T3) trimester of pregnancy. Blood creatinine and gamma glutamyl transferase (GGT) values were evaluated. Serum concentrations of osteocalcin and carboxy-terminal cross-linking telopeptide of type I collagen (CTX-I) were determined using an equine specific osteocalcin radioimmunoassay and an automated CTX-I electrochemiluminescent sandwich antibody assay.

Results All mares had normal creatinine and GGT values. Serum CTX-I values significantly increased during the last trimester of pregnancy. Serum osteocalcin concentrations were lowest at T2 and increased thereafter at T3.

Conclusions Changes in bone turnover seem to depend on the stage of pregnancy in multiparous mares. Highest values of serum CTX-I and osteocalcin were obtained in the last trimester of pregnancy.