

EFFECTS OF PREGNANCY ON COMPLETE BLOOD CELL COUNTS AND SERUM BIOCHEMICAL PROFILES IN DOGS

Emily T. Kimberely, Margret L. Casal, Patricia A. O'Donnell, Mark E. Haskins

School of Veterinary Medicine, University of Pennsylvania, USA

In humans, the hematological and biochemical changes occurring during pregnancy have been well studied with the most notable changes being anemia and a two-to-three-fold increase in serum alkaline phosphatase, exceeding normal concentrations. Canine gestational changes have not been well documented, precluding proper interpretation of blood parameters in illness that may arise during pregnancy. Weekly blood samples were obtained from 10 pregnant bitches from the first day of breeding until parturition. Complete blood cell counts, including reticulocyte counts, and serum biochemical parameters, including serum iron concentrations, were performed and the data statistically evaluated using the Student's *t*-test. Trends were similar to those of humans but less dramatic. In humans, the average increase in blood volume is 45–50%, while in the dog the increase was estimated to be only 25–30%. The mean red blood cell count and packed cell volume dropped slightly below normal adult values during the last 1–2 weeks of pregnancy. Platelets doubled during the second half of pregnancy significantly exceeding the upper normal limits by up to 43% during the last 2 weeks. All other hematological parameters remained within normal limits. While never exceeding normal, there was an increase in white blood cell counts attributable to increased neutrophils. Despite decreases in most serum biochemical parameters, all remained within normal ranges. Serum biochemical concentrations remained within normal limits even when adjusted to account for hemodilution. In summary, hematological and serum biochemical profiles in pregnant bitches do not differ significantly from those found in normal adult dogs. Therefore, pregnant bitches presenting with abnormal parameters should be examined for other, concurrent disease.

Keywords: Pregnancy; Canine; Hematology; Serum biochemistry

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SPERMATOCRIT AS A MEASURE OF CONCENTRATION OF SPERMATOZOA IN THE CANINE EJACULATE

Margaret V. Root Kustritz, Carla Kilty, Meghann Vollmer

University of Minnesota, College of Veterinary Medicine, USA

Semen was collected from 44 dogs by manual ejaculation. Aliquots were created containing known concentrations of spermatozoa, determined using a standard hemacytometer technique. Spermatocrits were performed by filling hematocrit tubes with internal diameter (i.d.) 0.53 or 1.1–1.2 mm, centrifuging for 1 min, and assessing percentage of solids. A standard scale was created, described by the equation [concentration (millions/ml) = (51.69)(% solids) – 47.43] for tubes with i.d. 0.53 mm, and [concentration (millions/ml) = (113.1)(% solids) – 262.6] for tubes with i.d. 1.1–1.2 mm. Concentration of spermatozoa in 33 samples was evaluated by a standard hemacytometer technique. Spermatocrits were performed and concentrations determined mathematically. Values determined by spermatocrit were compared with those determined with the hemacytometer by ANOVA and determined to be significantly different, with $p < 0.001$ for both sizes of hematocrit tube. Correlation coefficient comparing concentrations determined with a hemacytometer and spermatocrit using tubes with i.d. 0.53 mm was 0.75; correlation coefficient comparing concentrations determined with a hemacytometer and spermatocrit using tubes with i.d. 1.1–1.2 mm was 0.43. Spermatocrit is not an accurate measure of concentration of spermatozoa for dogs.

Keywords: Spermatozoa; Concentration; Semen evaluation; Canine

LONG TERM (>2 YEARS), REVERSIBLE, AND SIDE EFFECT-FREE CONTRACEPTION WITH A CO-EXTRUDED SILASTIC-BASED PROGESTIN IMPLANT IN DOGS AND CATS: AN EFFICIENT ALTERNATIVE TO IMMUNOCONTRACEPTION

John P. Verstegen, Karine M. Onclin, Bernard Boisramé

Department of Large Animal Clinical Sciences, Veterinary College, University of Florida, Gainesville, FL, USA

Many technologies have been explored and proposed for development of a long acting, non-surgical contraceptive for dogs and cats. This approach should not be expensive to allow the widest use possible. It should be