

Società Italiana delle Scienze Veterinarie

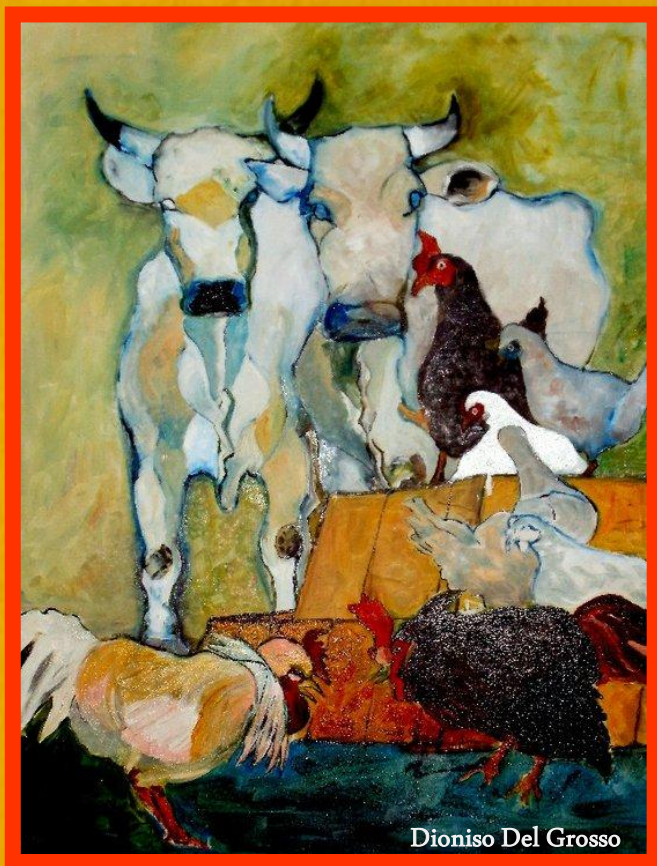
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72° CONVEGNO SISVET



PACKED RED BLOOD CELLS AND STORED WHOLE BLOOD TRANSFUSIONS IN DOGS. A RETROSPECTIVE STUDY IN 86 RECIPIENTS TRANSFUSED AT A CANADIAN VETERINARY TEACHING HOSPITAL

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Veterinary transfusion medicine is an essential part of therapy for critical patients in small animals. Many updates have been made in recent years and blood transfusion (either packed red blood cell, PRBC or stored whole blood, SWB) has been used to treat different disorders inducing canine anemia to improve oxygen delivery to the peripheral tissues (1,2,3). The aims of this study were to classify anemia in transfused-recipients and to analyze the hematocrit (Hct) value increase post-transfusion in relation to: pre-transfusion Hct, type of anemia (acute or chronic), type of product used (PRBC or SWB), donor's Hct and storage age of the blood product. Medical records of 86 patients (different for breed, gender and age) who received about 10-20 ml/kg of PRBC or FWB were collected at the Veterinary Teaching Hospital of the University of Montreal, Canada. The anemia was classified according to Hct, MCV, MCHC, and regeneration degree. The pre-transfusion Hct (T0) was compared to post-transfusion Hct at T1 (range 0-4h), T2 (4-16h), T3 (16-34h), T4 (34-50h) and T5 (more than 50h after transfusion) (Spearman test). The pre-transfusion Hct was compared to post-transfusion Hct in dogs with acute or chronic anemia transfused with either PRBC (n. 100) or SWB (n. 19). Furthermore, the influence of the storage and Hct of blood donor (blood products) used on post-transfusion Hct was assessed (Mann-Whitney test). The main cause for transfusion was acute and severe, macrocytic and hypochromic anemia with a moderate-high grade of regeneration due to hemorrhage. Pre-transfusion Hct of the recipient influenced the degree of the increase of post-transfusion Hct only in chronic anemia (moderately inversely proportional at T1 and T4, $\rho > -0.500$; and strongly inversely proportional at T5, $\rho < -0.600$). The type of blood product did not affect post-transfusion Hct. There were no differences between the increases of Hct in recipient affected by acute or chronic anemia receiving blood products with different Hct values. The increase in Hct post-transfusion was greater when less than 10-days old stored blood product was used ($P=0.0329$). In chronic anemia, lower pre-transfusion Hct was observed which was related with greater increase of post-transfusion Hct. In both chronic and acute anemias, both PRBC and SWB showed to be useful for improving the post-transfusion Hct. The use of blood products less than 10 days old was associated with a greater increase in post-transfusion Hct, possibly related to a greater viability of the transfusion cells less affected by "storage lesion".

(1) Yagi K. et al. Manual of Veterinary Transfusion Medicine and Blood Banking. Ed. Wiley Blackwell, 2016; (2) Haldane S. et al. Transfusion medicine. Compendium on Continuing Education for the Practicing Veterinarian, 26:502-518, 2004; (3) Kisielwicz C. et al. Canine and feline blood transfusions: controversies and recent advances in administration practices. Veterinary Anaesthesia and Analgesia, 41: 233-242, 2014.