than that against Negishi was found in 9.8%, and in the same relation the specific ELISA antibody against Negishi in 5.4%.

EXPERIMENTAL STUDIES ON TRANSFUSION INTO DOGS: CLINICAL AND HEMATOLOGICAL FINDINGS ON TRANSFUSION WITH BLOOD STORED IN CPD ON DOGS AFTER BLEEDING

Masato SAKAI

Department of Veterinary Surgery
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan

The present study was undertaken to document the clinical and hematological fidings on transfusion with blood stored in CPD into hypovolemic dogs. For this purpose, the changes of the components of canine blood stroed in CPD solution at 4±2°C for up to 6 weeks were observed, and after bleeding of 20% of the circulating blood volume, the dogs were transfused with the homologous blood stroed for 1 day, 3 weeks and 6 weeks as a replacement.

The results were summarized as follows:

1) During the 6 weeks of blood storage, the following changes were observed: the occurrence of decreases in the pH and Po_2, osmotic fragility of the erythrocytes, blood glucose, 2, 3-DPG and ATP in the erythrocytes; increases in the plasma hemoglobin and potassium and the breaking up of the white blood cells. There were no changes observed in the RBC, Ht, T.P. and plasma sodium. The 2, 3-DPG contents in the erythrocytes of the stored blood maintained 68% of the values of fresh blood after 3 weeks of storage and 26% after 6 weeks; and the ATP contents were 82% after 3 weeks and 50% after 6 weeks.

2) While hemorrhagic dogs were transfused with the blood stored in CPD to an equal volume of bleeding, the arterial pressure was increased gradually with infusion but not recovered to the initial values even after the completion of transfusion. Thereafter, however, the arterial pressure was maintained favorably, and there followed an improvement in clinical findings. The circulating blood volume was approximately 91% of the initial value during the 10-day post-transfusion period.

3) After transfusion, the Ht, Hb, T.P. and plasma sodium were maintained approximately at the initial values, but thereafter, the Ht and Hb were decreased gradually up to 3 days after transfusion. During the 3-hr post-transfusion period, the arterial and venous pH and blood glucose were restored approximately to the initial values.

4) In the two groups transfused with the blood stored for 3 and 6 weeks, the 2, 3-DPG content was depleted during the 3-hr post-transfusion period but restored to the initial value after 1 day, and hemoglobinemia and hemoglobinuria were observed in both groups.

STUDIES ON THE HEMAGGLUTINATING ACTIVITY OF PARAMYXOVIRUS ISOLATED FROM JAPANESE SPARROW-HAWKS

Tsutomu SEKIZAKI

Department of Epizootiology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan

The Takavirus, a variant of Newcastle disease virus (NDV), isolated from Japanese sparrow-hawks, was found to agglutinate unstablly chicken erythrocytes at room temperature. The purpose of these experiments was to analyse the cause of this phenomenon. The results may be summarized as follows: 1) the plaques of the Takavirus formed in the chick embryo fibroblasts (CEF) were heterogeneous in size. Two clones were isolated from the plaques: one showed a hemagglutinating (HA) reaction at only 4°C (L^+R^-); and the other showed an HA reaction at both 4°C and at room temperature (L^+R^+). 2) in attempts to purify these clones by serial passages in the CEF and in embryonated eggs, we were unable to obtain the purified viruses as a single population; however, 2 progenies, which were obtained from different embryonated eggs were found to be composed mainly of either L^-R^- or L^+R^+, and these progenies were used in the following experiments. 3) when the polypetides of the 2 clones of Takavirus and the 2 strains of NDV were compared by polyacrylamide gel electrophoresis, there was no difference in the molecular weight of the viral proteins among the viruses; 4) the elution of L^+R^- from the chicken erythrocytes occurred more rapidly at room temperature, and the amount of the eluted virus was greater than that obtained from L^+R^+ or NDV. The HA reaction did not occur when the fresh viruses were newly added to the erythrocytes which had eluted the viruses; 5) neuraminidase (NA) activity of these viruses was examined under various conditions; however, no difference was noted between the Takaviruses and the 2 strains of NDV in several substrates or at different reaction temperatures used. However, when the NA activity was examined under pH 7.2, where the HA reactions were usually carried out and where the value of NA/HA was calculated, the value of L^+R^- was larger than that of L^+R^+ or NDV; 6) the hemolytic activity of the Takaviruses and the NDV-Sato strain was lower than that of the NDV-