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Author(s)	TAKAKURA, Yuko
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**EXPERIMENTAL STUDIES ON TRANSFUSION IN DOGS:
ALTERNATIONS OF CANINE BLOOD STORED
IN A FEW PRESERVATIVE SOLUTIONS**

Yuko TAKAKURA

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

The present study was conducted in order to obtain data on the preservation of canine blood. Canine blood was stored for 6 weeks in ACD, CPD and CPD-AI (CPD with adenine and inosine solution) and then examined.

The following results were obtained:

1) ATP fell gradually to 40 % of the fresh collected blood during the 6-week storage. During the 7-day storage, 2, 3-DPG was well preserved, but it fell rapidly to 20 % of the freshly collected blood by the 4-week storage. There were few differences among these three solutions.

2) Plasma Hb values increased suddenly after the 4-week storage, and after the 6-week storage, they increased to 900-1000 mg/dl. There was a gradual decrease in the osmotic fragility of erythrocytes in the three solutions. However, by the 6-week storage, the decrease occurred in the following order of solutions: ACD, CPD, and CPD-AI.

3) Plasma potassium values rose rapidly during the 5-day storage, and thereafter, they rose less rapidly to 5.0-5.6 mEq/l by the 6-week storage. There was a marked rise in CPD-AI.

4) pH declined gradually to 90 % of the fresh collected blood by the 6-week storage.

5) The shape of the erythrocytes changed to crenate at the beginning of storage. After the 4-week storage, the crenate became spheroidal in the ACD, and by the 6-week storage, most of the erythrocytes became spheroidal. By the 6-week storage, most of the erythrocytes remained crenate in CPD, and in CPD-AI, one half of them were crenate.

The above data suggested that after the 4-week storage, osmotic fragility was maintained effectively in CPD-AI, and in ACD, the plasma components changed less than they did in CPD and CPD-AI.