SIDEROCYTES IN PERIPHERAL BLOOD IN VIRAL ANEMIA

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N. M. Ogienko and A. P. Gindin [1] have shown that in healthy horses as distinct from other animals investigated by them, it was impossible to discover in the peripheral blood siderocytes, that is, macrophages containing hemosiderin in their protoplasm.

In the present work, investigation was conducted on a further 30 healthy horses and attempts to discover siderocytes in their peripheral blood also failed.

It is known, however, that a large amount of hemosiderin is stored in the spleen, especially in adult horses. Since a blood depot exists in the spleen, one might have presupposed that with a mobilization of blood from this depot, as for example after a copious hemorrhage, that cells containing hemosiderin in their protoplasm might have been discovered in the blood path from this organ. In order to elucidate this question we investigated the blood of 26 healthy horses, used for the production of medicinal sera, after a series of bleedings.

The blood for the investigation was taken after the 1st, 2nd and 3rd bleedings in the consecutive immunizing cycle. At the end of each such cycle, lasting about a month, 2-3 bleedings were carried out at 48-hour intervals, providing 5-7 liters at each bleeding.

Therefore, the horse lost a total amount of 12-18 liters of blood in 3-5 days.

Despite such a heavy hemorrhage, which must of course be accompanied by an outflow of the blood deposited in the spleen, it was not possible to discover siderocytes in the peripheral blood.

Nor were they found in some nonimmunized horses after bleeding. Thus, in this type of animal, it was not possible to detect transport of the products of phagocytic decomposition of erythrocytes in the peripheral blood.

It is known, however, that in certain diseases iron metabolism is disturbed within the organism, this being particularly evident in infectious anemia in horses, expressing itself in disappearance of hemosiderin from the spleen, and appearance of macrophagocytes in the hepatic vessels. This viral disease is accompanied by bouts of fever and a lessening of the number of erythrocytes in the blood. In the chronic course, remissions between bouts of fever continue, sometimes for many months.

A few years ago when measures were taken to eliminate infectious anemia in producers of one of the serological products, we were offered an opportunity to investigate horses, producers of medicinal sera, suffering from infectious anemia. The investigation gave the following results.

* O. G. Lyutikova and I. A. Statkevich supplied the clinical material for this paper.

In a colt infected, for the purpose of diagnosing the disease, with blood of the horses referred to above, macrophages, containing protoplasmic hemosiderin (siderocytes)were discerned in the peripheral blood between the 7th and 10th day of the first bout of fever. In 10 horses suffering from the chronic form of infectious anemia, blood was taken on the 4th day of the consecutive bout of fever. In each of the 10 animals siderocytes were found in the peripheral blood.

Twenty-two horses were in a period of remission, lasting from 14 days to 3 months.

In 17 of these,siderocytes were disclosed in the peripheral blood, and in only 5 animals, in a period of remission lasting from 1 $\frac{1}{2}$ to 5 months, no siderocytes were found.

Four horses were in contact with the sick horses described above and were consequently subject to infection: although no vivid symptoms of the disease were evident, siderocytes were found in the peripheral blood in three of them.

Thus, in this disease, it was established that a disturbance of iron metabolism was present, manifest in the appearance in the peripheral blood of cells containing hemosiderin in their protoplasm. This phenomenon can be applied for diagnostic purposes.

LITERATURE CITED

[1] Ogienko, N. M. and Gindin, A. P., Byull. Eksptl. Biol. i Med. Vol. 34, No. 8, pp. 74-75 (1953).