AN ACCOUNT OF OUR EXPERIENCE IN THE TRANSFUSION
OF BOVINE THERAPEUTIC SERUM TO HUMAN PATIENTS

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Soviet scientists have demonstrated in clinical work that it is possible
practical interest is use in this manner of the serum of cattle, which serum
Belent'kii.

Numerous experimental investigations carried out in animals demonstrated
the therapeutic properties and advantages of this serum as compared with other
fusions of this serum to 16- to 70-year-old patients suffering from various
diseases. The quantity of serum administered is individual transfusions varied
from 100 to 1,000 ml. The individual transfusions were administered at intervals
and injections of the serum to be received daily for a number of weeks. For instance, one patient,
an intestinal obstruction, received 17 transfusions of the serum during 23 days.
The total volume of the serum administered to this patient amounted to 10,650
ml. There were no effects in this case.

We have used the serum extensively for parenteral feeding of patients after
operations on the gastrointestinal tract and also after operations in cases of
peritonitis. A sharp improvement in the general condition of the patient after
surgery of the stomach or of the intestine, and also in cases of stenosis of the
esophagus or of the pylorus, is explained by the high content of animal protein
in the serum.

The poorer the general condition of the patient and the more highly expressed
debility and intoxication are (for instance, in peritonitis), the better is the
clinical effect achieved by transfusion of the serum. To a considerable number
of patients suffering from suppurrative processes of the lungs and of the pleura,
the serum was administered not only for supplementing the quantity of proteins
but also for improving the general tonus of the organism. In combination with
surgical treatment, the transfusion of the serum noticeably improved the general
condition of the patients.

All clinical observations indicate that the serum has an outstanding stimu-
lating effect when applied in combination with therapy directed toward removing
osteomyelitis, and lingering peritonitis, diseases produced a distinct clinical effect, which was confirmed by laboratory
investigations.

In addition to hematological and some biochemical investigations, we have
investigated the antitoxic function of the liver by introducing into the body
sodium benzoate and then determining the content of hippuric acid in the urine.
We assumed that in cases of serious depression of the function of the liver, this
disturbance may be caused by the foreign nature of the protein introduced with
the serum. A selected group of patients, who suffered from slowly progressing
suppurative conditions (abscesses of the lungs, bronchial fistulas, hematogenic
osteomyelitis), was treated with the serum. In more than 50% of the patients
there was improvement of the indices of the antitoxic function of the liver
after transfusion of the serum. In cases where the reactions were observed at
the time of transfusion and after it, an abrupt rise in the antitoxic function
of the liver was always found.
Although we were very careful in evaluating the reaction to the synthesis of hippuric acid, which reaction was considered without taking other results into account, we still found a definite correlation between improvement of the patient's condition and an increase in the antitoxic indices. The stimulating effect of the serum was also confirmed by other observations made by us during the last few years. When we applied the serum for the treatment of mastitis that occurred subsequent to birth and that took a slow course, we observed in a number of cases an increase in lactation. In the case of women who suffered from partial or complete absence of milk, transfusion of serum often increased the amount of lactation.

Preliminary data obtained by us indicate that the serum has the property of increasing virility. Analogous results on animals were obtained by N. N. Mamfeva in 1952.

The reactions to the administrations of serum arise as a rule in the initial stage after the transfusion and occur much less frequently in the later stages. Occasionally there are weak pains along the course of the vein. These pains disappear promptly when the injection rate of the serum is reduced. The pains are not followed by a convolution and one may inject the serum into the vein repeatedly.

In cases where there was a general reaction to the serum, the patients complained of difficulty in breathing and of pains in the chest and around the waist. Lowering of the blood pressure was observed in such cases. Occasionally there was a clinical syndrome of serum disease.

When a general reaction occurs, it is violent as a rule, particularly in debilitated patients. However, after the transfusion has been stopped, all symptoms of anaphylaxis disappear within several minutes. No therapeutic measures are necessary.

As the technological process for the preparation of the serum is improved, the number of reactions drops. While we obtained 10% of general reactions in the first 269 transfusions, there were only 3% of general reactions subsequent to the 261 transfusions carried out after that.

The time between transfusions has no noticeable effect on the frequency of reactions. There was also no correlation between the occurrence of reactions and the time intervals when transfusions of serum and whole human blood were carried out alternately.

To prevent reactions, one should administer, either subcutaneously or intravenously, one milliliter of morphone 10-15 minutes prior to the transfusion and carry out the biological test as it is performed prior to an ordinary blood transfusion.

Notwithstanding the great advantages of the species- nonspecific cattle serum, it has not yet been brought to the attention of the wider medical community, especially practical physicians. One experiences great difficulties if one wishes to obtain this valuable preparation, which marks a notable advance in the practical solution of the problem of the transfusion of heterogenous blood.