

4. Title Study on blood volume changes in gibbon malaria.

Principal Investigator: Tan Chongsuphajaisiddhi, M.D., Ph.D.

Assistant Investigators: Thaiyooth Chintana, D.V.M.
Nongnuj Pirojboot, B.Sc.

OBJECTIVE

The objective of this study is to measure the changes in blood volume in gibbon malaria and to relate these changes to other events observed in the course of infection.

DESCRIPTION

A previous study on the effects of *P. coatneyi* malaria revealed that during one critical period of the infection a reduced blood volume occurred. Because of reduced intravascular albumin, increased intravascular permeability seemed the most likely explanation. (Annual report 196.). The present study was carried out to investigate whether such changes also occur in the course of gibbon malaria.

Thai gibbons were used in this experiment and the methods of study were the same as described in the previous work on *P. coatneyi* malaria.

PROGRESS

The average blood volume in 4 uninfected gibbons was 66.1 ml/kg which is higher than that observed for the rhesus monkey (57.6 ml/kg).

In 3 infected gibbons, a slightly reduced blood volume occurred in 2 animals during the critical period of the infection. The blood volume returned to the control level after the hematocrit and the parasitemia levelled off in one animal (Fig. 1). The other gibbon died during the crisis, however, in this case, it is difficult to rule out the effect of anesthetics (phenobarbital). In the third gibbon, there were no definite changes in blood volume (Fig. 2).

The changes in blood volume were not as remarkable as in *P. coatneyi* malaria. The gibbons never became obviously sick and the liver and renal functions were within normal limits with the exception of the serum cholesterol level.

Figure 1. Changes in Red Cell Mass, Plasma and Blood Volume and Parasitaemia of a case of gibbon malaria (B-14-S)

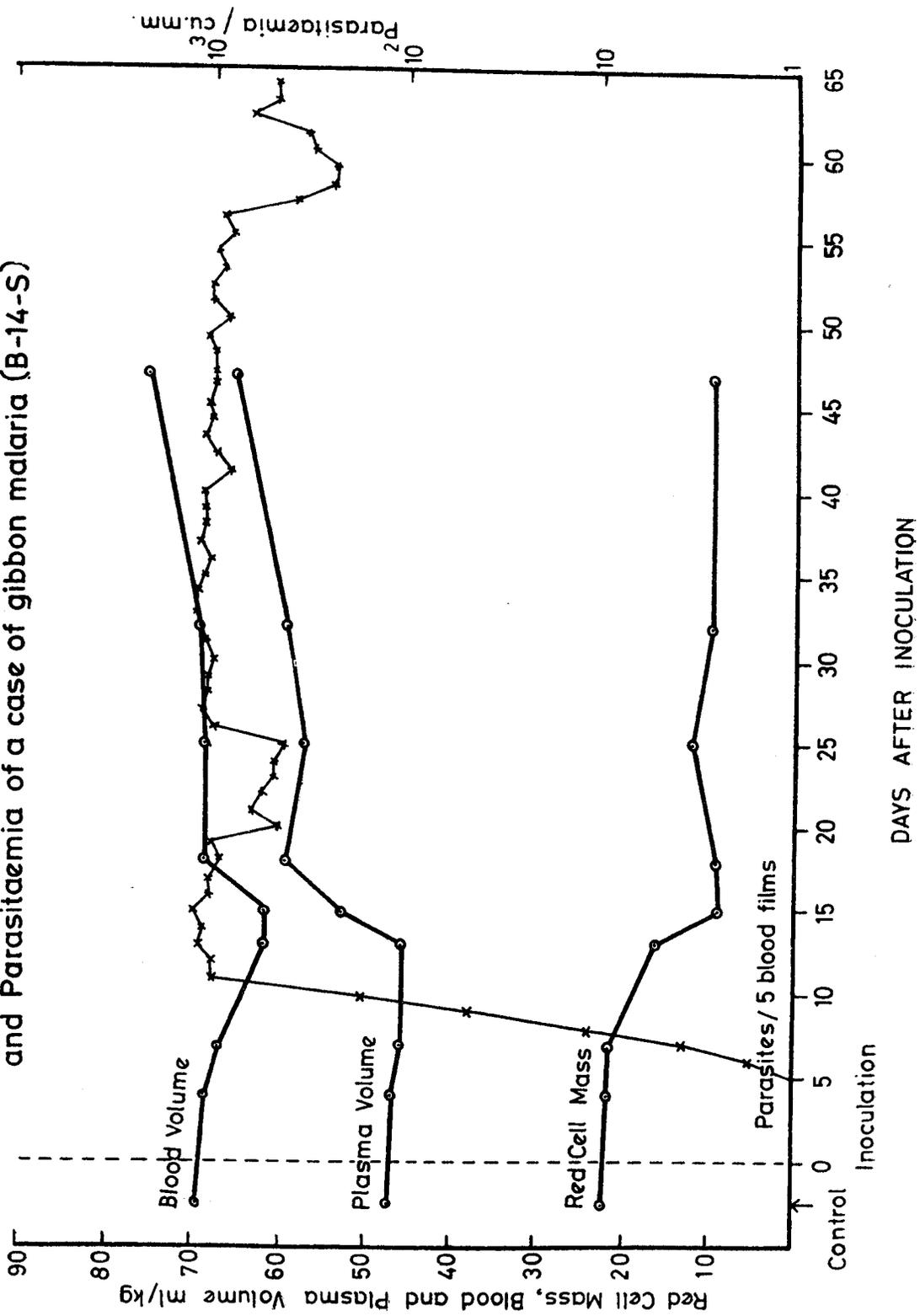


Figure 2. Changes in Red Cell Mass, Plasma and Blood Volume and Parasitaemia of a case of gibbon malaria (B-31-S) ♂

