

Subtitle: Comparative Studies in the Pathology and Host Physiology of Malaria: Plasma Free Fatty Acids in Normal and Malarious Gibbons.

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Introduction:

It has been observed that there was a decrease in serum cholesterol in malarious gibbons (Miller, L.H., Desowitz, R.S., Yuthasadrkosol, V., Buchanan, R.D., and Permpnich, B. 1967. Comparative studies in the pathology and host physiology of malaria. II. Gibbon Malaria (To be submitted for publication). The question was raised as to whether this change represents a generalized lipid metabolism defect or was limited to cholesterol.

Objective:

The objective of this study was to examine the plasma free fatty acid level of normal, intact; normal, splenectomized; infected, intact; and infected, splenectomized gibbons in order to determine the effects of malaria infection on this parameter.

Methods:

Gibbons, normal or infected, intact or splenectomized, maintained in our animal colony were used throughout the study. Five ml. of blood was drawn into a heparinized syringe after an overnight fast (1700 hrs. to 0800 hrs.) and the plasma immediately analyzed for free fatty acids using the method of Kvam et al. (Kvam, D.C., Schmidt, J.G., Riggils, D.A., and Galls, D.G. 1964. Colorimetric micro-determination of plasma free fatty acids. J. Pharmaceut. Sci. 53:988).

Progress:

Twenty-seven gibbons were examined in this study, the results being shown in Table I. No significant differences were observed between any of the four groups studied. These data indicate that the gibbon malaria apparently does not affect the transport of free fatty acids and does not drastically alter the anabolic or catabolic metabolism of free fatty acids.

A publication entitled "Comparative Studies in the Pathology and Host Physiology of Malaria. III. Plasma Free Fatty Acids In Normal and Malarious Gibbons (Hylobates lar). by B.W. Langer, Jr., R.S. Desowitz, L.H. Miller, and D. Vacharaphorn reporting the results of this study has been submitted for clearance.

Summary:

There is no significant differences in plasma free fatty acids between normal and malarious gibbons.

TABLE I

Plasma Free Fatty Acids in Normal and Malarious Gibbons.

Gibbon treatment	Ave. FFA level (umoles/ml)*	S.D.	Range	N
Normal, Intact	0.306	0.088	0.130—0.457	15
Normal, Splenectomized	0.397	0.099	0.263—0.484	6
Infected, Intact	0.374	0.026	0.357—0.391	2
Infected, Splenectomized	0.329	0.125	0.183—0.477	4

* Stearic acid was used as the standard in the analysis for FFA.