Resistance of Gibbons (*Hylobates lar*) to Gonococcal Infection

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OBJECTIVE: To determine if the white-handed gibbon (*Hylobates lar*) would serve as a satisfactory host for experimental infection with *Neisseria gonorrhoeae*.

BACKGROUND: Attempts to produce *N. gonorrhoeae* infection in gibbons were previously unsuccessful at SEATO Medical Research Laboratory (1). This study is a continuation of that investigation.

DESCRIPTION: Adult male gibbons were inoculated intra-urethrally with 5 x 10^6 gonococcal colony forming units (CFU) from urethral exudate of ten male patients. The animals were observed for 30 days with daily urethral cultures obtained throughout the testing period.

Urethral exudate gonococci (GC) were incubated at both 39°C (gibbon body temperature) and at 36°C. After incubation CFU's were determined for both incubation temperatures. For comparison, cultures of type one GC (F 62) were also incubated at 39°C and 36°C and CFU's observed.

The gonococcocidal activity of gibbon blood leukocytes was measured. This was accomplished by incubating a mixture of type one GC and leukocytes at 39°C in the absence of serum.

RESULTS: All four gibbons inoculated with urethral exudate showed elevated leukocyte counts and developed a clear discharge, but yielded negative results for urethral smears and cultures for *N. gonorrhoeae* throughout the 30 days of observation. Urethral exudate gonococci incubated at 39°C showed decreased numbers of CFU when compared with incubation at 36°C. Stock cultures to type one GC (F 62) produced analogous results at both temperatures. In the measurement of the gonococcocidal activity of gibbon leukocytes, it was found that killing was negligible (mean = 53%) at 60 minutes but became significant (mean = 78%) at 120 minutes of incubation.

PROGRESS: We previously reported that type one GC (F 62) incubated as above with human leukocytes were not significantly killed (mean = 40%) at 120 minutes of incubation. That data in combination with the present results suggests that the relatively more efficient gonococcocidal activity of gibbon leukocytes may play a role in the resistance of gibbons to gonococcal infection.

REFERENCES:

1. Thongthai, C. F., Stutz, D. R.: SEATO Medical Research Laboratory Annual Report, April 1973-74.

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