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**Comparison of aerosolized *F. tularensis* in three species of nonhuman primates**

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Tularemia, a zoonotic disease caused by *Francisella tularensis*, is most commonly transmitted to humans by contact with infected animals, tick bites, or inhalation of aerosolized bacteria. *F. tularensis* is highly infectious via the aerosol route with less than 10-50 organisms able to cause disease. The pneumonic form of the disease occurs after inhalation of bacteria and has a 30% case-fatality rate if left untreated, which can be reduced to 3% if treated early with antibiotics. Therefore, development of effective antibacterial therapeutics and vaccines against *F. tularensis* is necessary to protect our military and civilian populations against this potential biothreat agent. Potency and efficacy testing of new vaccines or antibacterial therapeutics require animal models that imitate human disease as closely as possible.

**Aims:** In this study, three species of nonhuman primates (African green monkey (AGM), cynomolgus and rhesus macaque) were exposed to various doses of aerosolized *F. tularensis* Schu 4 utilizing a staircase method to determine the LD<sub>50</sub> and ID<sub>50</sub>.

**Methods:** Blood samples were taken after exposure to assess complete blood count (CBC), clinical chemistry, bacterial load, and cytokines.

**Results:** While AGMs and cynomolgus macaques succumbed to disease with 100 CFU of aerosolized Schu 4, the target dose that caused lethality for rhesus was 10<sup>5</sup> CFU.

**Conclusion:** Overall results indicated that the cynomolgus macaque model for aerosolized tularemia was the best model representing human tularemia among three species.