

Changes in Plasma Ceruloplasmin Activity in an Animal Model of Shigellosis

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Objective: Evaluate changes in the ceruloplasmin activity in an animal model of shigellosis.

Methodology: The ceruloplasmin activity was estimated and compared with normal animal in a rabbit model of shigellosis. Colonic infection was induced in adult rabbits by inoculating *Shigella flexneri* 2a. Blood samples were obtained before and after infection from the 24 to 192-hour experiment period for control and infected animal for measuring the ceruloplasmin activity.

Results: The preliminary results showed that the ceruloplasmin activity (mg/dl, mean±SE) in the plasma was: 17.67±1.02 (control, n=12), 37.08±1.10 (24 hours infected, n=12), 42.04±0.99 (48 hours infected, n=7), 36.80±1.93 (72 hours infected, n=7), 33.11±1.70 (96 hours infected, n=6 hours), 13.88±1.86 (192 hours infected, n=7).

Conclusion: These preliminary data indicated that the serum concentration of the ceruloplasmin activity was significantly elevated during infection of 24 and 48 hours due to shigellosis. However, after 72-192 hours of infection, the ceruloplasmin activity in the plasma was progressively decreased which may be due to the accumulation of copper in the liver and brain and ultimately reached below the baseline values at 192 hours due to copper deficiency.

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Potential Invasive Properties of *Vibrio cholerae* O139 Bengal in a Rabbit Model: A Preliminary Study

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Objective: Study the invasive properties of *Vibrio cholerae* O139 Bengal.

Methodology: Adult New Zealand white rabbits were used. Closed intestinal loops of 10-cm length, following appropriate surgical procedures, were constructed. Live cultures of *V. cholerae* O139 (bacterial count: 10⁹/mL) were inoculated in each loop. Two loops were constructed in the small intestine of an additional rabbit. One loop was challenged with *V. cholerae* O139, and the other one (control) with bacteria-free culture medium.

Results: After 18 hours, inflammatory changes were noted in the gut wall mucosa of all rabbits. Blood cultures revealed the growth of *V. cholerae* O139 in one animal, suggesting mucosal invasion followed by bacteraemia. While the gut wall of the control loop showed no signs of inflammation, there were definite signs of inflammation in that of the challenged one.

Conclusion: These preliminary observations indicate that some strains of *V. cholerae* O139 may have invasive properties in rabbits.

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