



THE INTESTINAL ANTIBODY RESPONSE TO BACTERIAL
GASTROENTERITIS IN HUMANS

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ABSTRACTTHE INTESTINAL ANTIBODY RESPONSE TO BACTERIAL
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This thesis examines the antibody response to bacterial gastroenteritis in humans with particular reference to antibody levels in the intestine.

While understanding of the secretory antibody system has advanced greatly through animal experiments and studies with vaccines, the intestinal antibody response to gastroenteritis has been inadequately documented. This area is reviewed and the lack of appropriate antibody assays for measuring intestinal antibody is pinpointed as one of the fundamental reasons for this.

The effect of different storage temperatures on antibody activity in intestinal fluid was examined in preliminary studies.

The development and validation of a radio-immuno assay for measuring intestinal antibody is described.

Using this assay the antibody response in serum and gastrointestinal secretions was measured on two occasions in 16 adults and 9 children after Salmonella and Shigella gastroenteritis. Their responses were compared with controls who were either healthy or recovering from a minor attack of gastroenteritis with no defined bacterial agent responsible.

The results showed a consistent antibody response in the intestine which was mainly in the IgA class. Taking

the patients as a group, the serum response was of the same order of magnitude as the intestinal response but this was not so in individual patients. The response in the intestine was early and could conceivably play a part in recovery from the disease. The duration of the response will require further study. Antibody in saliva and in the IgA class in the serum did not appear to reflect the antibody response in the intestine.

The relevance of these results to immunity in bacterial gastroenteritis and further studies that need to be undertaken in relation to the possible development of vaccination programmes against these diseases are discussed.

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