

# Gastric acid secretion and enteric infection in Bangladesh [Get access](#)

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## Abstract

In developing countries many enteric infections are caused by acid-sensitive pathogens. Failure of the gastric acid barrier to infection has been reported in cholera but gastric acid secretion has been little studied in other enteric infections. We therefore studied basal and stimulated gastric acid in 185 Bangladeshi men admitted to hospital for the treatment of enteric infection. Patients with dysentery (amoebiasis,  $n = 24$  and shigellosis,  $n = 19$ ) and culture-negative diarrhoea ( $n = 69$ ) had similar mean gastric acid levels (basal, 3–5 mmol/h; stimulated, 11–17 mmol/h), which remained stable in those patients studied throughout 12 weeks of convalescence. In contrast, patients with secretory diarrhoea caused by cholera or enterotoxigenic *Escherichia coli* (ETEC) had low gastric acid levels ( $P < 0.05$  compared with other groups) (cholera,  $n = 34$ : basal mean 1.8 mmol/h [SD = 2.2], stimulated mean 7.9 mmol/h [SD = 6.4]; ETEC,  $n = 39$ : basal mean 2.7 mmol/h [SD = 2.8], stimulated mean 9.4 mmol/h [SD = 7.5]). Cholera patients' gastric acid level rose during convalescence to similar levels to the dysentery patients'. Low gastric acid level was associated with severe disease in patients with cholera ( $P < 0.02$ ) or ETEC ( $P < 0.05$ ). Gastric acid level fell with increasing age ( $P < 0.007$ ) but this did not account for the differences between groups. Gastric acid levels were not associated with *Giardia duodenalis* or *Strongyloides stercoralis* co-infection, fever, use of tobacco, or chewing betel nut. Cholera and secretory diarrhoea caused by ETEC may, therefore, partly result from a reduction in gastric acid level which does not occur during dysentery. Factors which impair gastric acid secretion may predispose to diarrhoeal disease in developing countries.

**Keywords:** hypochlorhydria, diarrhoeal disease, amoebiasis, shigellosis, cholera, *Escherichia coli*, ETEC, gastric acid secretion, Bangladesh

**Topic:** amebiasis, cholera, diarrhea, dysentery, fever, giardia lamblia, bangladesh, developing countries, gastric acid, chewing, strongyloides stercoralis, tobacco, infections, convalescence, shigella infections, pathogenic organism, gastric acid secretion, enterotoxigenic escherichia coli, diarrhea, secretory, coinfection, betel nut

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