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Helicobacter pylori infection and linear growth deficits among school children in México

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Helicobacter pylori (*H. pylori*) is a Gram-negative spiral-shaped bacterium that infects gastric-type epithelium(1). *H. pylori* infection is a common chronic infection associated with chronic type B gastritis, gastric and duodenal ulcer and gastric cancer(2). Infection usually is acquired early in life in the developing countries. Several studies suggest that gastric colonisation with *H. pylori* is associated with suboptimal nutrition and impaired growth in childhood(3,4). This study examined the prevalence of *H. pylori* infection in school-age children from an urban area in Northwest México and attempted to relate the presence of this infection to growth of children, while accounting for other factors that may have a negative influence on growth, such as dietary energy, protein and iron intakes, as well as the presence of iron-deficiency anaemia and/or intestinal parasites. The cross-sectional study was conducted among 178 asymptomatic children aged 9 and 10 years. *H. pylori* status was determined in children by the ^{13}C-urea breath test. Weight, height and haemoglobin measurements along with analysis of faecal samples were carried out in each child. Dietary information was collected through three non-consecutive diet recalls (24-h dietary recall method) administered to children at their homes. The overall prevalence rate of *H. pylori* infection was 47.1 %. There was a borderline significant difference in the mean ($P = 0.071$) height-for-age Z-scores between *H. pylori* positive and negative children. In the multiple ANOVA, a borderline significant main effect of *H. pylori* infection on height-for-age Z-score ($P = 0.062$) was detected. *H. pylori* infection was found to be positively highly associated with *Hymenolepis nana* infection ($\chi^2 = 10.529$, $P = 0.001$). No differences in mean energy, protein and iron intakes between *H. pylori* positive and negative children were observed. The results suggest that neither protein nor iron, but only energy intake could have played a small part in determining the pattern of growth faltering in study children. *H. pylori* infection and enteric parasites were not significantly correlated with the presence of anaemia. In summary, the results of this study raise the possibility that *H. pylori* may be a necessary factor, but not in itself, sufficient to cause delayed growth in children. The reasons for any given impairment of child's growth are extremely complex. It is very difficult to isolate the effects of *H. pylori* infection. Nevertheless, some populations in developing countries living under conditions of extreme poverty, particularly suffering from simultaneous enteric parasitic infections and/or specific nutrient deficiencies together with *H. pylori* infection would make it of public health significance.

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