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# Comparison of Prevalence of Chronic Atrophic Gastritis in Japan, China, Tanzania, and the Dominican Republic

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## Abstract

**Purpose:** To compare the prevalence of chronic atrophic gastritis (CAG) in Japan, China, Tanzania, and the Dominican Republic and to assess the usefulness of *Helicobacter pylori* infection and serum gastrin level as markers of CAG.

**Methods:** The subjects were volunteers from local communities in Japan (n = 859), China (n = 1741), Tanzania (n = 573), and the Dominican Republic (n = 1215). Each individual underwent a health checkup and blood sampling for measurement of serum pepsinogen I and II, pepsinogen I /II ratio, serum gastrin, and *H. pylori* antibodies, and responded to a questionnaire on upper digestive tract diseases.

**Results:** The prevalences of *H. pylori* infection (23.5–96.1%), CAG (5.6–60.4%), and serum gastrin (62.0–136.5 pg/ml) varied by age, sex, and country. Serum gastrin level for men differed in each country according to age. In Tanzanian men, the median gastrin level (101.0 pg/ml) was the highest in the 40 to 49 years age group ($p < 0.01$) while there was no significant difference among different age groups in Tanzanian women. Serum gastrin level in subjects ≥ 70 years was higher than in other age groups in both sexes in the Dominican Republic (males, 92.5, females, 136.5 pg/ml). The prevalence of *H. pylori* infection increased ($p < 0.01$) with advancing age in Japan (only for women) and the Dominican Republic but was high in all age groups of both sexes in China and Tanzania. The prevalence of CAG increased ($p < 0.01$) with age in both sexes in Japan, China (women only), and the Dominican Republic, but not in Tanzania. The odds ratio of CAG in *H. pylori* infected subjects was 5.3 times that in *H. pylori*-negative subjects. The odds ratio of CAG increased by 0.6%/1 pg/ml increase in serum gastrin.

**Conclusions:** Our results indicated that *H. pylori* infection, serum gastrin, and advancing age are good markers of CAG and that the prevalence of CAG is the highest in Japan.