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Key molecules associated with the development of nodular gastritis due to Helicobacter pylori infection in children

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Background: Chronic *Helicobacter pylori (H. pylori)* infection in children induces lymphoid hyperplasia called nodular gastritis (NG). The aim of this study was to evaluate gene expression in pediatric antral mucosa with NG by microarray analysis to identify molecules closely associated with NG when compared to NG-negative pediatric and adult tissue with *H. pylori* infection.

Methods: Eight pediatric and six adult *H. pylori*-infected patients, as well as six pediatric and six adult uninfected patients were evaluated. All infected adults had atrophic gastritis (AG). Nodular gastritis was observed in the antrum of all eight pediatric patients and in the corpus of three patients. Adult and uninfected patients were free of NG. Total RNA was purified from gastric biopsies and microarray analysis was performed to compare gene expression between groups. The three infected children with NG in both the antrum and corpus were excluded from analysis of corpus samples.

Results: The total number of genes significantly up- or down-regulated (fold changes>3, P<0.01) compared to uninfected controls varied widely with 72 in pediatric antrum, 45 in pediatric corpus, 104 in adult antrum and 77 in adult corpus. Nineteen genes had significantly altered expression in the antrum of NG tissue compared to NG-negative pediatric corpus tissue and adult AG tissue. Although many molecules known as regulators of lymphoid follicle development were not predominantly upregulated in the NG mucosa, the CD20 B cell specific differentiation antigen demonstrated the most pronounced increase.

Conclusions: CD20 over expression may play an important role in developing lymphoid follicle enlargement and NG.

Biography

Tamaki Ikuse has completed his MD and PhD from Juntendo University Graduate School of Medicine. He is working as an Assistant Professor in the Department of Pediatric and Adolescent Medicine, Juntendo University Graduate School of Medicine and also acts as a Visiting Assistant Professor in the Department of Pediatrics, University of Maryland School of Medicine. He has published more than 10 papers in reputed journals.

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