Reviewer’s report

Title: Role of Helicobacter pylori cagA EPIYA motif and vacA genotypes for the development of gastrointestinal diseases in Southeast Asian countries

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Reviewer: Steffen Backert

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Infection with cagA-positive, cagA EPIYA motif ABD type, and vacA s1, m1, and i1 genotype strains of Helicobacter pylori. Here, the authors examined the cagA status and prevalence of cagA EPIYA motifs and vacA genotypes among H. pylori strains found in Southeast Asia and examined their association with gastroduodenal disease. The respective frequencies of cagA-positive and vacA s1, m1, and i1 genotypes among examined subjects were 93% (1,056/1,133), 98% (1,080/1,104), 57% (616/1,090), and 96% (248/259), respectively. Stratification showed significant variation in the frequencies of cagA status and vacA genotypes among countries and the individual races residing within each respective country. The frequency of the vacA m-region genotype in patients infected with East Asian-type strains differed significantly between the northern and southern areas of Vietnam (p < 0.01). Infection with vacA m1 type or cagA-positive strains was associated with an increased risk of peptic ulcer (odds ratio: 1.46, 95%CI: 1.01-2.12, p = 0.046 and 2.83, 1.50-5.34, p = 0.001, respectively) in the examined Southeast Asian populations. In conclusion, both Western- and East Asian-type strains of H. pylori are found in Southeast Asia and are predominantly cagA-positive and vacA s1 type. In Southeast Asia, patients infected with vacA m1 type or cagA-positive strains have an increased risk of peptic ulcer. Thus, testing for this genotype and the presence of cagA may have clinical significance.

Comments:

1.) page 3: The phosphorylation of EPIYAs were originally discovered in 2001 (Mol Microbiol. 2001,42:631-44; J Biol Chem. 2002, 277:6775-8) and not in 2005 by ref 18,19. Can you pls correct this?

2.) A very recent functional study in JCI investigated in detail the contribution of each EPIYA segment both in Western and South East Asian strains during infection for its phosphorylation + binding of host factors (J Clin Invest. 2012, 122:1553-66). Can you pls discuss this with the results of your study?