Authors' reply

Sotirios D. Georgopoulos[a], Pericles Apostolopoulos[b], Spyridon Michopoulos[c], Theodore Rokkas[d]

Athens Medical, P. Faliron Hospital; NIMTS Hospital, Athens; Alexandra Hospital, Athens; Henry Dynant Hospital, Athens, Greece

We read with great interest the letter by Papaefthymiou *et al* [1] concerning the Greek National Consensus on *Helicobacter pylori (H. pylori)* infection [2]. We certainly agree with the authors that over the past years in order to overcome the fast-growing antibiotic resistance of *H. pylori* infection worldwide, an "add-on" strategy has been adapted, and that this is more obvious in countries like Greece, where bismuth salts are not commercially available. Thus, novel *H. pylori* eradication regimens, with a more targeted pathophysiological approach, are under evaluation and we are awaiting with great interest the results of the ongoing clinical trials.

Eradication of *H. pylori* infection has traditionally relied on empiric therapeutic regimens, since the need for endoscopy and the limited availability of culture, in most countries including Greece, have rendered the susceptibility-guided treatment option impractical or even unfeasible. Moreover, a recent randomized study showed that susceptibility-guided therapy in a high-resistance area was equally effective as a local empirical regimen [3], while another randomized study failed to reveal superiority of genotypic resistance-guided therapy over a properly designed empirical treatment for eradication of refractory *H. pylori* infection [4]. For these reasons, the Greek consensus has stated (Statement 26) that culture and antimicrobial susceptibility testing is not recommended before first-line therapy, and that susceptibility-guided therapy should be provided as a rescue treatment, especially after second-line treatment has failed.

On the other hand, the effect of vitamin D (vitD) on *H. pylori* infection and eradication rates has been widely investigated recently [5]. VitD, apart from its well-known role in calcium and phosphorus metabolism, has been proven to be potent immune modulator of the adaptive immune system, stimulating the innate immune response upon infection [6]. Based on these data, several clinical studies have illustrated that vitD analogs may have anti-*H. pylori* antimicrobial effects. Cytological research has also found that $vitD_3$ decomposition product 1 can lyse *H. pylori* bacterial cells by inducing the collapse of the cell membrane [7]. However, the correlation with vitD has not been fully clarified and studies of the impact of serum vitD levels on *H. pylori* eradication were mostly observational or retrospective and of small sample size [8-10]. Therefore, well-designed randomized controlled prospective studies with a large sample size are needed. We were delighted to hear that a national multicenter study on the relationship between vitD and *H. pylori* was recently launched and we are awaiting the results.

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[a]GI Department Athens Medical, P. Faliron Hospital, P. Faliron, Greece; [b]GI Department NIMTS Hospital, Athens, Greece; [c]GI Department Alexandra Hospital, Athens, Greece; [d]GI Department Henry Dynant Hospital, Athens, Greece

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Correspondence to: Sotirios D. Georgopoulos, MD, FEBGH, AGAF, Director, GI Department. Athens Medical, P. Faliron Hospital, 144 Kountouriotou Str.,18535 Piraeus, Greece, e-mail: georgpap@ath.forthnet.gr

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