Ampicillin-sulbactam versus amoxycillin in quadruple therapy for Helicobacter pylori eradication: a preliminary study

Antibiotic resistance is the main source of failure for Helicobacter pylori eradication, and beta-lactamases produced by resistant H. pylori strains are a possible mechanism underlying ineffectiveness of an amoxycillin-based triple or quadruple therapy.1 Of 153 clinical isolates of H. pylori in a previous study, 71.9% were resistant to amoxycillin, 77.8% to metronidazole, and 39.2% to both.2 Antibacterial activities of beta-lactamase inhibitors such as clavulanic acid and sulbactam have been demonstrated in a number of in vitro studies.3,4 However, using clavulanic acid along with amoxycillin has not significantly increased the H. pylori eradication rate in vivo.5,6

We used a combination of sultamicillin (ampicillin 225 mg plus sulbactam 150 mg) instead of amoxycillin and compared its effectiveness with that of the standard amoxycillin-based quadruple therapy. The study protocol was approved by the ethical committee of Tehran University of Medical Sciences.

The study included 55 H. pylori-positive patients (age range 17-74 [median 38] years; 30 men) with peptic ulcer. H. pylori status was determined by rapid urease test at entry and C14-urea breath test 6 weeks after the end of therapy. After giving written informed consent, patients were randomly assigned to either of two groups: group 1 (n=29) received a 10-day standard quadruple therapy (amoxycillin 2 x 1000 mg/d, omeprazole 2 x 20 mg/d, colloidal bismuth subcitrate 2 x 240 mg/d, and metronidazole 2 x 500 mg/d), and group 2 (n=26) received sultamicillin (Pfizer SA, Case Postale, Zurich, Switzerland) 2 x 375 mg/d (before breakfast and dinner) instead of amoxycillin in the quadruple regimen for the same duration.

In group 1, one patient discontinued treatment due to severe allergic reactions. Vomiting, skin rash, and pruritus occurred in 3 other patients. All patients in group 2 completed the study. However,
minor complications (abdominal pain, vomiting, diarrhea and skin rash) were experienced in 8 patients. Of 28 patients in group 1 who completed the treatment, _H. pylori_ was eradicated in 23 patients (82.1%), while eradication was demonstrated in 24 patients (92.3%; \( p=0.13 \)) in group 2.

The eradication rate in group 1 was similar to that achieved in previous studies.\(^7\)\(^8\) Quadruple therapy consisting of sultamicillin 2 x 375 mg/d instead of amoxycillin was at least as effective as the standard amoxycillin-based quadruple therapy. It was well tolerated by all patients. The sample size in this study was small. Studies with larger sample sizes are needed to confirm the results obtained in this study.

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