



# Does *Helicobacter pylori* Eradication Therapy Result in a Platelet Count Improvement in Adults with Immune Thrombocytopenic Purpura Regardless of *H pylori* Infection?

## ASH Evidence-based Review 2008

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*A 34-year-old male with a long history of immune thrombocytopenic purpura (ITP) presents to your office. His platelet count is  $30 \times 10^9/L$  and he is clinically stable with no bleeding symptoms. He has read that *Helicobacter pylori* eradication therapy may be effective for ITP and he asks you about this. You do not have access to reliable tests for *H pylori* infection (e.g., urea breath test), yet you wonder about the benefit of empiric eradication therapy for your patient.*

A causal relationship between *H pylori* infection and ITP has been suggested by studies showing platelet count improvements following *H pylori* eradication in infected patients. However, alternate explanations for a platelet count response following treatment are possible including the eradication of bacteria other than *H pylori* or immune modulating effects of the treatment itself. Moreover, a recent meta-analysis demonstrated that patients receiving treatment had a greater increase in platelet count from baseline compared

with untreated controls regardless of the outcome of eradication therapy.<sup>1</sup> To examine the independent effect of *H pylori* treatment on improvement of thrombocytopenia, we performed a comprehensive literature review of all studies evaluating the platelet count response to *H pylori* treatment in infected and uninfected adults with ITP.

A literature search was performed by combining the MESH term “purpura, thrombocytopenic, idiopathic” and the keywords “idiopathic thrombocytopenic purpura” and “immune thrombocytopenic purpura” (no restrictions, 3116 hits), and the MESH term “*Helicobacter pylori*” (no restrictions, 21871 hits), and the MESH terms “randomized controlled trial as topic,” “randomized controlled trial,” and “prospective studies” (no restrictions, 306471 hits) between 1950 and April 2008. This strategy yielded 85 citations including one meta-analysis, from which 10 additional references were taken from the bibliography. Excluded were 44 non-adult citations, 16 case reports, 8 reviews and 1

**Table 1. Proportion of *Helicobacter pylori* (HP)-positive and HP-negative adult patients with ITP achieving a platelet count response.**

	HP-positive responders	HP-positive non-responders	HP-negative responders	HP-negative non-responders	Definition of response	Country of origin
Morimoto 2007 <sup>2</sup>	7	12	0	3	Platelet count increase by 20 or more above baseline	Japan
Asahi 2006 <sup>3</sup>	16	26	0	11	Increase in platelet count by 100 or more by 24 weeks	Japan
Inaba 2005 <sup>4</sup>	11	25	0	10	Platelet count above 100	Japan
Takahashi 2004 <sup>5</sup>	8	15	0	5	Platelet count increase by 20 or more above baseline	Japan
Michel 2004 <sup>6</sup>	1	15	0	10	Platelet count at least 50 and double from baseline	USA
Ando 2004 <sup>7</sup>	10	17	0	2	Platelet count above 90	Japan
Hino 2003 <sup>8</sup>	12	21	0	3	Significant increase in platelet count	Japan
Overall response	65 (49.6%)	131	0	44		

reference about non-*H pylori* infection, leaving 26 citations. Of those, 19 reports preselected *H pylori*-positive patients only and were excluded, leaving 7 eligible studies (n = 222). A platelet count response was achieved following *H pylori* therapy in 65 (49.6%) of 131 infected patients, and none of the 44 uninfected patients (**Table 1**)—differing definitions of “success” limit the strength of this conclusion, and most studies were from Japan, where the prevalence of *H pylori* infection is high.

We conclude, based on this review, that treatment of thrombocytopenia in adults with ITP using *H pylori* eradication therapy should be reserved for patients with active *H pylori* infection (Grade 2C). A beneficial effect of the treatment itself was not observed.

#### Disclosures

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