
This is the author's manuscript

Original Citation:

Availability:
This version is available http://hdl.handle.net/2318/1509267 since 2016-05-10T11:06:00Z

Published version:
DOI:10.1016/j.urology.2015.01.040

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On *Helicobacter pylori* treatment: involvement in male infertility

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We have read the paper by El-Garem et al reporting the effect of *Helicobacter pylori* (*H. pylori*) treatment on sperm motility in infertile asthenozoospermic men.¹ Evaluating seminal antibodies (IgA) to *H pylori* by enzyme-linked immunosorbent assay on a total of 223 men with progressive and nonprogressive sperm motility, authors found elevated levels of seminal *H. pylori* IgA antibody in 22 (9.8%) subjects. These cases were treated with anti-*H. pylori* triple therapy based on omeprazole, tinidazole and clarithromycin. After treatment, a significant decrease of antibody levels was observed in association with a significant increase in sperm motility and normalization of morphology. Considering a potential antigenic mimicry mechanism, inducing an autoimmune cross-reaction between antibody directed to bacterial antigens and β-tubulin protein of human spermatozoa, authors concluded that *H. pylori* treatment improved sperm motility suggesting the research of seminal antibodies to *H. pylori* in asthenozoospermic men.¹

*H pylori* is a Gram-negative bacterium, its niche is the stomach where can cause gastritis and peptic disease. Although since two decades extra-gastric manifestations have been attributed to this bacterium but only for a small part of these a role has been proved.²
Although the authors correctly reported the lack of association between serum an seminal IgA, a clear clinical message should be highlighted. In this study the presence of _H pylori_ has not been shown because the assessment of antibodies to the bacterium in semen is not an appropriate test. In fact, according to International guidelines the non-invasive diagnosis of _H pylori_ infection should be based on either $^{13}$C-Urea breath test (sensitivity 88-95% and specificity 95-100%) or monoclonal stool antigen test (sensitivity 94% and specificity 92%), called direct tests; as last resort, only validated IgG serology should be used (indirect test). Indeed, the presence of antibodies to _H pylori_ could represent just a marker of previous exposure without necessarily indicating a current infection. In the context of interventional studies the use of a direct diagnostic test both prior to and after treatment is mandatory.

Since the message highlighted in this paper could carry relevant implications in clinical practice, we suggest that future studies on this issue should use appropriate and validated methods for _H pylori_ diagnosis in order to avoid unnecessary antibiotic treatments in potential uninfected individuals.

**References**

