



# A Comment on *Helicobacter pylori* and Lung Transplant Outcome: Is Serology the Ideal Diagnostic Approach?

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In an interesting paper, Bennett et al. evaluated the correlation between the positivity of antibodies to *Helicobacter pylori* (*H. pylori*) in serum and the outcome of lung transplant outcome. The authors found that despite a similar prevalence of *H. pylori* infection in patients with lung transplantation and in the general population, there was a higher prevalence of *H. pylori* infection in patients who underwent lung transplant because of pulmonary fibrosis ( $p=0.049$ ), and a lower prevalence in COPD patients ( $p=0.011$ ). No correlation was found between this infection and graft outcome. Nevertheless, more patients who required three or more post-transplant re-hospitalizations were observed among those with *H. pylori* positivity. The authors concluded that the prevalence of *H. pylori* infection is not different to the general population in patients with lung transplant and that it does not impact the outcome of the procedure [1].

*Helicobacter pylori* infection is acquired in the preschool period and this risk declines sharply after 5 years of age. The higher prevalence in older age groups reflects a cohort effect related to poorer living conditions during childhood. It has been shown that this bacterium plays a crucial role in the pathogenesis of gastritis and peptic ulcer disease [2]. Furthermore, in the latest two decades, links between *H. pylori* infection and extragastric manifestations have been reported. The diseases in which a possible role of *H. pylori* has been hypothesized are cardiovascular diseases, hepatic diseases, skin diseases, rheumatologic diseases, blood diseases, and respiratory diseases [3, 4].

We would like to report our observation on serology, the method used by Bennett et al. [1]. Methods for assessing *H. pylori* infection can be classified as invasive or non-invasive, the former being based on biopsy specimens obtained at endoscopy. The approach depends on the clinical context. It is crucial to highlight that the tests vary in sensitivity and specificity which may result in misinterpreted data [2]. Urea breath test is the most important non-invasive and direct test, able to diagnose the presence of the bacterium, with higher accuracy than serology [5]. The positivity of antibodies to *H. pylori* in serum is marker of exposure and not necessarily of active infection and has some drawbacks. The most important is its marked variability in accuracy with the possible interpretation of positivity as consequence of active infection as well as of previous bacterial exposure. For this reason, this type of test could be used in epidemiological studies [5] but, in our opinion, the correlation of *H. pylori* infection with the follow-up after lung transplant requires the diagnosis of an active infection. Hence, a direct test should be the ideal one.

## Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no conflict of interest.

## References

- Bannett D, Fossi A, Chiarello G et al (2018) *Helicobacter pylori* infection does not impact on lung transplant outcome. Lung <https://doi.org/10.1007/s00408-018-0178-7>
- Pellicano R, Ribaldone DG, Fagoonee S, Astegiano M, Saracco GM, Mégraud F (2016) A 2016 panorama of *Helicobacter pylori* infection: key messages for clinicians. *Panminerva Med* 58:304–317
- Caviglia GP, Olivero A, Rosso C, Bosco C, Ribaldone DG, Fagoonee S (2018) Laboratory evidence of *Helicobacter* species infection in hepatocellular carcinoma. *Minerva Biotechnol* 30:88–93

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- Patrucco F, Venezia L, Gavelli F, Solidoro P (2018) *Helicobacter pylori* and respiratory diseases: update for pneumologist. *Minerva Pneumol* 57(3):73–80
- Sabbagh P, Mohammadnia-Afrouzi M, Javanian M et al (2018) Diagnostic methods for *Helicobacter pylori* infection: ideals, options, and limitations. *Eur J Clin Microbiol Infect Dis*. <https://doi.org/10.1007/s10096-018-3414-4>

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