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Letter to Editor

Helicobacter pylori Resistance: A Medical Predictive Factor of Response

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Dear Editor,

We read with interest the paper by Saniee et al, who found that at Shariati Hospital (Tehran, Iran), among dyspeptic patients referred to the endoscopy unit for upper gastrointestinal (GI) endoscopy during the period 2010-2017, *Helicobacter pylori* resistance to metronidazole (MTZ) increased from 33%–55.6% to 79.4% over time, to clarithromycin (CLR) increased from 1.4%–7.3% to 34.4%, to tetracycline (TET) increased from 0–38.1% to 38.5%, to amoxicillin (AMX) increased from 1.4%–7.3% to 27.1% and to furazolidone (FRZ) increased from 0%–4.5% to 23.9%.[1]

We would like to highlight several points regarding these results.

Helicobacter pylori resistance is defined as primary when patients have never been treated for this bacterium and secondary when patients have already been treated. Thus, these two concepts express in the first scenario a correlation with a degree of antibiotic consumption and in the second scenario the consequence of the fact that users fail to take their full course of prescribed antibiotic treatment. In the latter scenario, the bacteria subsequently remain untouched gaining more strength against the antibiotics.[2]

Considering primary resistance, based on a multicentre study published in 2013, the resistance rate of *H. pylori* in Europe was 34.9% for MTZ, 17.5% for CLR, 0.9% for TET and 0.7% for AMX. The same study assessed the fits of models and the degree of ecological association between antibiotic use and resistance data. A significant association was found between fluoroquinolone use and the proportion of levofloxacin resistance in *H. pylori* and between the use of long-acting macrolides and clarithromycin resistance.[3] In the paper by Saniee et al, it is unclear if patients are at their first treatment or are experienced.[1]

Furthermore, we are astonished with the high rate of resistance to AMX (27.1%) when compared to Europe (0.7%). The same is true for the resistance to TET. It would be interesting to ask the authors if they have data on AMX and TET consumption in their area. This data would be alarming in case of primary resistance.

Finally, we have a comment. Normally, the main reason of *H. pylori* resistance to antibiotics is supposed to be poor patient compliance. Recently, in China[4] and in Italy,[5] two examples of poor medical compliance have been reported. In our study, in the period from first of January 2014–to first of January 2016, we found that the repetition of the same treatment after a failure (a well-known wrong doctor strategy) occurred in 15.1% of patients *versus* the 3.9% of the period 2004–2006 ($P < 0.0001$). There was no difference comparing generalists, gastroenterologists and internists. Moreover, the repetition prevalence among gastroenterologists ranged from 0% in the period 2004–2006 to 18.2% in the period 2014–2016 ($P = 0.088$).[5]

In conclusion, the work by Saniee et al, beyond updating the data on *H. pylori* resistance to antibiotics in their area, stimulates a new field of research investigating the reasons for this increase.

Conflict of Interest Disclosures
None.

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