

Update on *Helicobacter pylori* Antibiotic Susceptibility in Hong Kong, 2019–2025: Trends, Challenges, and Therapeutic Implications

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Introduction

Empirical proton pump inhibitor-based triple therapy is commonly used for eradication of *Helicobacter pylori* infection instead of susceptibility-guided regimens, making high-quality, up-to-date resistance data essential. *H. pylori* susceptibility data in Hong Kong have not been updated since 2016. This study aimed to provide contemporary resistance data to guide empirical treatment of *H. pylori* infection in Hong Kong.

Method

This retrospective laboratory study included all gastric biopsy specimens submitted to the Microbiology Laboratory of Hong Kong Sanatorium and Hospital for *H. pylori* culture from March 2018 to 30 June 2025. *H. pylori* susceptibility patterns and patient demographics were retrieved from the laboratory information system.

Result

Of 1782 culture-positive specimens, 1744 isolates were included in the susceptibility analysis after exclusion of paediatric and follow-up samples. Overall non-susceptibility rates were highest for metronidazole (52.2%), followed by clarithromycin (41.7%), levofloxacin (33.3%) and rifampicin (13.6%); non-susceptibility to amoxicillin and tetracycline was 1.4% and 0.3%, respectively. Clarithromycin non-susceptibility in patients aged >65 years was significantly lower than in those aged 18–35 years (difference 0.1151, $p=0.0363$), whereas levofloxacin non-susceptibility was significantly lower in the 18–35-year group. Only 395/1744 (22.6%) isolates were susceptible to all six antibiotics tested. Among isolates resistant to ≥ 2 agents, clarithromycin–metronidazole co-resistance was most frequent (25.2%), followed by clarithromycin–levofloxacin (20.7%) and levofloxacin–metronidazole (20.0%); triple resistance to clarithromycin, levofloxacin and metronidazole occurred in 13.1%

Conclusion

Compared with older local data, we observed markedly higher non-susceptibility to clarithromycin (41.7% vs 10%) and levofloxacin (33.3% vs 17%), and a substantial increase in dual clarithromycin–metronidazole resistance (25.2% vs 7.4%). [1–2] Although primary resistance could not be specifically assessed, these findings highlight rising macrolide and fluoroquinolone resistance in community *H. pylori* and have important implications for empirical treatment choices in Hong Kong

Reference

- [1] Nagy P, Johansson S, Molloy-Bland M. Systematic review of time trends in the prevalence of *Helicobacter pylori* infection in China and the USA. *Gut Pathog.* 2016 Mar 15;8:8. doi: 10.1186/s13099-016-0091-7. PMID: 26981156; PMCID: PMC4791971.
- [2] Wang WH, Wong BC, Mukhopadhyay AK, Berg DE, Cho CH, Lai KC, Hu WH, Fung FM, Hui WM, Lam SK. High prevalence of *Helicobacter pylori* infection with dual resistance to metronidazole and clarithromycin in Hong Kong. *Aliment Pharmacol Ther.* 2000 Jul;14(7):901–10. doi: 10.1046/j.1365-2036.2000.00795.x. PMID: 10886046.