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**Evolution of the use, effectiveness and safety of bismuth-containing quadruple therapy for Helicobacter pylori infection between 2013 and 2021: results from the European registry on H. pylori management (Hp-EuReg)**

Olmedo L, Calvet X, Gené E, *et al.* Evolution of the use, effectiveness and safety of bismuth-containing quadruple therapy for Helicobacter pylori infection between 2013 and 2021: results from the European registry on H. pylori management (Hp-EuReg). *Gut* 2025; 74: 15-25. doi: 10.1136/gutjnl-2024-332804.

Helicobacter pylori (H. pylori) is challenging to treat due to antimicrobial resistance. The use of quadruple therapy (3 antibiotics + PPI (proton pump inhibitor), or 2 antibiotics + bismuth + PPI) has become standard in many countries. Bismuth offers advantages through its bacteriostatic and synergistic effects when combined with antibiotics.

The Hp-EuReg study was an international, multi-centre study which prospectively analysed patients receiving single-capsule (ScBQT) or non-single-capsule (NScBQT) bismuth-containing quadruple therapy (BQT) from 2013-21. Only patients with confirmatory eradication tests were included in the intention-to-treat analysis.

Of 49,690 patients, 15,582 (31%) received BQT. Usage varied markedly across Europe; BQT was prescribed as first-line therapy in 72.3% of cases, second-line in 18.5%, and as rescue therapy in 9.2% (as is the case in the United Kingdom (UK)). ScBQT with PPI was used in 43% of cases. BQT achieved over 90% cure rates as first-line therapy and when paired with standard/high-dose PPIs (≥ omeprazole 40 mg bd), outperforming low-dose PPI regimens. ScBQT showed consistent >90% effectiveness across Europe.

Treatment success predictors included adherence (OR (odds ratio) 8.4), ScBQT use (OR 1.9), 14-day regimens (OR 1.3), and standard/high-dose PPIs (OR 1.7). Adverse effects occurred in 40% of patients, leading to treatment interruptions in 10%–predominantly due to gastrointestinal symptoms.

This well-powered study supports BQT as first-line or rescue therapy in high-resistance areas. ScBQT could become standard treatment in such areas and needs to be made accessible. Moreover, PPI doses should routinely be set at omeprazole 40 mg bd or equivalent, carrying significant implications for UK clinical practice.