


Vonoprazan dual therapy versus bismuth quadruple therapy for eradication of Helicobacter pylori infection – A Meta-analysis of Randomized Studies

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The present meta-analysis showed that **Vonoprazan Dual (VD) therapy** showed a **comparable eradication rate** as Bismuth quadruple (BQ) therapy with a **lower risk of AEs**. VD may **improve compliance** due to lower pill burden and AEs while maintaining the same efficacy.

Background	Results	Acknowledgements
<ul style="list-style-type: none"> Bismuth quadruple (BQ) therapy is currently the consensus recommendation as first-line treatment for Helicobacter pylori (H. pylori). Vonoprazan dual (VD) therapy with amoxicillin has shown to have a higher eradication rate than standard triple therapy with a proton pump inhibitor. The present meta-analysis aims to compare the efficacy and safety of BQ and VD therapy for the eradication of H. pylori infection. 	<ul style="list-style-type: none"> A total of 11 RCTs (n =2568) were included in the final analysis. There was no significant difference in the risk of eradication between the VD and BQ groups in the ITT analysis (RR 1.02, 95% CI: 0.98-1.06; I2 = 41%) (10 studies) and PP analysis (RR 1.03, 95% CI: 1.00-1.07; I2 = 65%) (11 studies). On subgroup analysis based on the dose of amoxicillin (High dose: ≥3 gm/day and standard dose: < 3 gm/day) showed no difference between the VD and BQ group. The risk of AEs in the ITT analysis was significantly lower in the VD group with RR 0.53 (95% CI: 0.41-0.69; I2 = 50%) (7 studies). The grade of evidence for various outcomes varied from low to moderate. 	<ul style="list-style-type: none"> Conflicts of Interests: None Financial disclosures: None Acknowledgements: Librarian Erika Schultz Author Correspondence: <Sushrut.Ingawale@HHHealth.org>
<h3>Methods</h3> <ul style="list-style-type: none"> A comprehensive search of literature from inception to September 2024 was done of Medline, Scopus, and Embase for randomized controlled trials (RCT) comparing the outcome of first-line BQ therapy and VD therapy in the eradication of H. pylori infection. The outcomes included eradication as per the intention-to-treat (ITT) analysis, per-protocol (PP) analysis, and adverse events (AE). Risk ratios (RR) with 95% confidence intervals were calculated for all the dichotomous outcomes. 		<h3>References</h3> <ol style="list-style-type: none"> Yan, K., Dai, X., Li, Z., Rong, W., Chen, L., & Diao, X. (2024). Clinical Study on the Eradication of Helicobacter pylori by Vonoprazan Combined with Amoxicillin for 10-Day Dual Therapy. <i>Clinical pharmacology in drug development</i>, 13(3), 240-247. https://doi.org/10.1002/cpdd.1357 Yan, T. L., Wang, J. H., He, X. J., Zhu, Y. B., Lu, L. J., Wang, Y. J., Wang, Z. W., Gao, J. G., Xu, C. F., Mo, H., Luan, S. M., Li, L., & Chen, Y. (2024). Ten-Day Vonoprazan-Amoxicillin Dual Therapy vs Standard 14-Day Bismuth-Based Quadruple Therapy for First-Line Helicobacter pylori Eradication: A Multicenter Randomized Clinical Trial. <i>The American journal of gastroenterology</i>, 119(4), 655-661. https://doi.org/10.14309/ajg.0000000000002592 Qiu, S., Huang, Y., Chen, J., Guo, Y., Li, M., Ding, Z., Liang, X., & Lu, H. (2024). Vonoprazan-Amoxicillin Dual Therapy With Different Amoxicillin Administration Regimens for Helicobacter pylori Treatment: A Randomized Controlled Trial. <i>Helicobacter</i>, 29(4), e13118. https://doi.org/10.1111/hel.13118 Peng, X., Yao, J. Y., Ma, Y. Q., Li, G. H., Chen, H. W., Wan, Y., Liang, D. S., Zhang, M., & Zhu, M. (2024). Efficacy and Safety of Vonoprazan-Amoxicillin Dual Regimen With Varying Dose and Duration for Helicobacter pylori Eradication: A Multicenter, Prospective, Randomized Study. <i>Clinical gastroenterology and hepatology: the official clinical practice journal of the American Gastroenterological Association</i>, 22(6), 1210-1216. https://doi.org/10.1016/j.cgh.2024.01.022



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VONOPRAZAN DUAL THERAPY VERSUS BISMUTH QUADRUPLE THERAPY FOR ERADICATION OF HELICOBACTER PYLORI INFECTION – A META-ANALYSIS OF RANDOMIZED STUDIES

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Introduction:

Bismuth quadruple (BQ) therapy is currently the consensus recommendation as first-line treatment for Helicobacter pylori (H. pylori). Vonoprazan dual (VD) therapy with amoxicillin has shown to have a higher eradication rate than standard triple therapy with a proton pump inhibitor. The present meta-analysis aims to compare the efficacy and safety of BQ and VD therapy for the eradication of H. pylori infection.

Methods:

A comprehensive search of literature from inception to September 2024 was done of Medline, Scopus, and Embase for randomized controlled trials (RCT) comparing the outcome of first-line BQ therapy and VD therapy in the eradication of H. pylori infection. The outcomes included eradication as per the intention-to-treat (ITT) analysis, per-protocol (PP) analysis, and adverse events (AE). Risk ratios (RR) with 95% confidence intervals were calculated for all the dichotomous outcomes.

Results:

A total of 11 RCTs (n =2568) were included in the final analysis. There was no significant difference in the risk of eradication between the VD and BQ groups in the ITT analysis (RR 1.02, 95% CI: 0.98-1.06; I2 = 41%) (10 studies) and PP analysis (RR 1.03, 95% CI: 1.00-1.07; I2 = 65%) (11 studies). On subgroup analysis based on the dose of amoxicillin (High dose: ≥3 gm/day and standard dose: < 3 gm/day) showed no difference between the VD and BQ group. The risk of AEs in the ITT analysis was significantly lower in the VD group with RR 0.53 (95% CI: 0.41-0.69; I2 = 50%) (7 studies). The grade of evidence for various outcomes varied from low to moderate.

Conclusion:

The present meta-analysis showed that VD therapy showed a comparable eradication rate as BQ with a lower risk of AEs. VD may improve compliance due to lower pill burden and AEs while maintaining the same efficacy.

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