Efficacy and Safety of Ibrutinib Combined with Venetoclax in the Treatment of Mantle Cell Lymphoma: A Single-Arm Meta-Analysis

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Background

- Mantle cell lymphoma (MCL) is an aggressive B-cell malignancy with poor prognosis despite current therapies.
- Ibrutinib, a Bruton's tyrosine kinase (BTK) inhibitor, and venetoclax, a BCL-2 inhibitor, have shown individual efficacy in MCL, but their combined therapeutic potential remains underexplored.
- This meta-analysis aims to assess the efficacy and safety of ibrutinib plus venetoclax in the treatment of MCL.

Methods

- Outcomes were pooled as untransformed proportions using a random-effects model.
- Meta-analyses were conducted using R Studio 5.3.
- A total of 5 studies fulfilling predefined selection criteria were included in the meta-analysis.

Databases searched

PubMed® Cochrane Embase® ClinicalTrials.gov A service of the U.S. National Institutes of Health

Screening and Data Extraction

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Statistical Analysis

- **Software:** Statistical analyses were conducted using R Studio 4.4 .
- **Effect Measures:**
- *Proportions* with 95% CIs for sensitivity and specificity were pooled.
- Sensitivity and subgroup analyses were performed to address heterogeneity.
- An I^2 value of >50% was considered significant heterogeneity.

Results

- A total of 179 patients across five studies were included, with a median age of 68±7.9years, and a male predominance of 62% to 88%.
- The pooled overall response rate was 82% (95% CI: 77%–87%).
- Clinical remission rate of 64% (95% CI: 55%–73%).
- uMRD rate of 61% (95% CI: 48%–74%).
- Progression-free survival and 1-year overall survival were 86% (95% CI: 79%–94%) and 92% (95% CI: 86%–99%), respectively.
- Disease progression occurred in 11% (95% CI: 5%–17%).
- Grade ≥3 adverse events and serious adverse events occurred in 63% (95% CI: 49%–76%) and 36% (95% CI: 16%–57%), respectively.
- Treatment discontinuation and tumor lysis syndrome were reported in 26% (95% CI: 20%–32%) and 3% (95% CI: 1%–6%), respectively.

Conclusion

- The combination of The combination of ibrutinib and venetoclax demonstrates high overall response and survival rates in mantle cell lymphoma, with manageable toxicity.
- These findings support its potential as an effective therapeutic option, though further studies are warranted to validate long-term outcomes and safety.
- Robust studies with larger sample sizes are required to establish conclusive evidence.

References