

Evaluation of Mirabegron, Tolterodine, and Fesoterodine for Double-J Stent-Related Symptoms: A Comparative Analysis

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Abstract : Introduction: Ureteral stent-related symptoms significantly impact patients' quality of life. This study compared the efficacy of Mirabegron, Tolterodine, and Fesoterodine in managing these symptoms. Methodology: In this prospective, randomized, placebo-controlled trial, two hundred patients undergoing ureteral stenting were randomly assigned to receive Mirabegron, Tolterodine, Fesoterodine, or placebo for two weeks. Symptoms were assessed using the Ureteral Stent Symptom Questionnaire (USSQ) at stent removal. Results: 200 patients completed the study. Mirabegron demonstrated the lowest mean USSQ score (31.6 ± 6.4), followed by Fesoterodine (34.0 ± 6.9) and Tolterodine (35.0 ± 7.2), all significantly lower than placebo (48.6 ± 8.7 , $p < 0.001$). Mirabegron showed superior efficacy in reducing urinary symptoms (score: 16.5 ± 3.9) compared to Fesoterodine (17.8 ± 4.1) and Tolterodine (18.2 ± 4.3). Side effects, such as parched mouth, were less frequent with Mirabegron (6%) than with Tolterodine (28%) and Fesoterodine (24%). Conclusion: All three medications significantly improved stent-related symptoms compared to placebo. Mirabegron demonstrated a trend toward superior efficacy and fewer side effects, suggesting its potential as a first-line treatment for stent-related discomfort.

Keywords : ureteral stent, mirabegron, tolterodine, fesoterodine, USSQ, stent-related symptoms

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