

Efficacy and safety of aprepitant vs. olanzapine for chemotherapy-induced nausea and vomiting (CINV) prophylaxis: An open-label randomized controlled trial (RCT)

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ABSTRACT

Introduction: Olanzapine, which is an atypical antipsychotic medication has been shown to be useful in CINV prevention and may be an economical alternative. However, the use of olanzapine in Malaysia is currently not advocated. As such, this RCT aimed to evaluate the efficacy and safety of olanzapine compared to aprepitant, a relatively novel and costly antiemetic, for the prevention of CINV in local healthcare settings. **Methods:** This multicenter, open-label RCT was conducted between August 2022 and March 2023. Fifty-nine chemo-naïve patients between 18 to 69 years old, who planned to receive highly-emetogenic chemotherapy (HEC) in outpatient settings were randomly allocated into olanzapine or aprepitant arm in a 1:1 ratio. All prophylaxis was given for 3 days. The outcome was complete response (CR) of no nausea and vomiting, within 5 days after chemotherapy, as evaluated by the Multinational Association of Supportive Care in Cancer (MASCC) Anti-emesis Tool (MAT). Side effects were analyzed by the Patient-reported Outcome of Common Terminology Criteria for Adverse Effects (PRO-CTCAE). **Results:** Overall, CR rates were 46.7% for the olanzapine and 24.1% for the aprepitant arms ($p=0.071$). However, the olanzapine arm was superior for overall nausea control ($p=0.037$) and acute CINV phase control ($p=0.006$). The olanzapine group demonstrated to be equally as safe and well tolerated as the aprepitant group except for heartburn where patients in the olanzapine arm reported lower than the aprepitant arm ($p=0.001$). **Conclusion:** Equivalent to aprepitant, olanzapine is a safe and effective choice for CINV prevention in patients receiving HEC, especially when the cost is the main limitation.