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Role of Novel Dopamine Antagonist In Chemotherapy-Induced Nausea Vomiting- A Review

Naziya Fathima. Z

B.Pharmacy, VII Sem, School of pharmaceutical sciences, VISTAS, Chennai, Tamil Nadu

Corresponding author: Dr. M. Dheenadhayalan, Assistant Professor, Department of pharmacy Practice, School of pharmaceutical sciences, VISTAS, Chennai, Tamil Nadu

Email: naziyaathima107@gmail.com

ABSTRACT

Chemotherapeutic drugs are highly toxic which stimulates the chemo receptor trigger zone (CTZ) brain stem that causes the Chemotherapy-induced nausea vomiting. The novel dopamine antagonist plays a significant role in chemotherapy induced nausea and vomiting CINV by blocking dopamine receptor particularly the D2 receptor, which is involved in the emetic pathway in the brain reduce the adverse effect. The novel dopamine antagonist are designed to target specific dopamine receptor subtypes with a higher selectivity.

To analyse the potential benefit of adding olanzapine (novel D2 antagonist) to the standard anti emetic regimen (5-HT3+dexamethasone+NK1 antagonist), especially in delayed phase vomiting and breakthrough vomiting. To evaluate the additional side effect of adding olanzapine. It objectifies by assessing the safety profiles and tolerability of dopamine antagonist compared to other antiemetics

In this study, a total of 10 patients undergoing chemotherapy were enrolled and randomly divided into two groups, with 5 patients in each group. Group A receives the standard anti emetic regimen consisting of 5-HT3 receptor antagonist, dexamethasone and NK1 receptor antagonist. Group B receives the standard regimen with the addition of novel D2 antagonist such as olanzapine. The objective is to evaluate the effectiveness of adding olanzapine to the standard antiemetic treatment in reducing chemotherapy-induced nausea and vomiting.

The study demonstrates that the addition of novel dopamine antagonist (olanzapine), to the standard antiemetic regimen significantly reduced the incidence of severity of chemotherapy-induced nausea and vomiting. The group B patients show better antiemetic response compared to group A patients but group B patients show signs of weight gain and

From the above comparative studies it concludes that adding a novel dopamine antagonist to a standard regimen provides significant antiemetic response during delayed phase vomiting and breakthrough vomiting but at a cost of sedation and weight gain.

Keywords: CINV, novel dopamine antagonist, olanzapine, delayed phase, breakthrough phase, extrapyramidal motor action, dopamine receptor(D2).