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Commentary

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A Brief Overview on Treatment of Nausea and Vomiting due to Chemotherapy

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DESCRIPTION

Significant progress has been made in the treatment of Chemotherapy-Induced Nausea and Vomiting (CINV) over the last two decades. These advancements are mostly owing to a better knowledge of the physiological and molecular pathways that underpin CINV, which has resulted in significant progress in the treatment of CINV patients. Dexamethason was used to treat CINV in the early 1990s. The discovery of the 5-HydroxyTryptamine (5HT3) receptor and the development of 5HT3 receptor antagonists have improved the management of CINV control (RA). In the acute phase of CINV, this route is largely implicated. Following investigations revealed that using a combination of 5HT3 RA and dexamethasone resulted in even more improvements in CINV control.

The identification of NeuroKinin-1 Receptor Antagonists (NK1-RA) and their role in the aetiology of delayed phase CINV over the last decade has resulted in substantial advancements in the management of this anticancer therapy complication. More importantly, these enormous accomplishments have resulted in an increase in anticancer treatment compliance as well as an improvement in the quality of life of cancer patients.

Despite these advances, nausea and vomiting, in particular, continue to be a clinically important issue for patients undergoing both highly emetogenic and Mildly Emetogenic Chemotherapy (MEC). When administered with a triple therapy comprising of an NK1 RA aprepitant in combination with a 5HT3 RA and corticosteroids prophylaxis, 70% of patients treated with cisplatin-based HEC will achieve an overall antiemetic full response. For patients receiving cisplatin and AC-based chemotherapy, current antiemetic recommendations (MASCC/ESMO, ASCO, and NCCN) recommend triple therapy treatment.

The biology and pharmacology of the NK1 receptor and substance P, antiemetic management of germ cell tumour patients undergoing multiple days of chemotherapy, Radiotherapy Induced Nausea and Vomiting (RINV), CINV induced by oral cytotoxic agents and targeted therapies in patients undergoing treatment for solid tumours, adherence to CINV guidelines, and the benefits of NEPA (a new agent) consisting of a combination of cytotoxic agents and targeted therapies In addition, two novel clinical articles on the use of ramosetron and olanzapine in the treatment of CINV are provided. Antagonizers of the 5-HT3 receptor are key in the development of CINV's acute phase.

Patients with germ cell tumours who receive 5 days of cisplatin-based chemotherapy develop CINV in a different way than those who get single-day chemotherapy. As a result, the efficacy of antiemetic medicines as seen in single-day chemotherapy is irrelevant. The incidence of nausea and vomiting after radiotherapy varies between 50 and 80

percent, depending on the region of irradiation, dose, fractionation, irradiated volume, and radiotherapy procedures. RINV is a critical but understudied topic that clinicians frequently overlook.

The administration of daily oral antiemetic medication is the mainstay of treatment for nausea and vomiting produced by oral antineoplastic drugs. Prophylactic antiemetics are not suggested for these agents due to a lack of evidence. NEPA is a new single-fixation oral combination drug that contains a highly selective NK1 RA and palonosetron. This 5-HT3 RA is both pharmacologically and clinically unique. When compared to earlier 5-HT3 RAs, palonosetron has a longer half-life. When used in combination with netupitant, palonosetron has the potential to improve the efficacy in the prevention of the delayed phase of CINV.

The antipsychotic olanzapine has been demonstrated to be useful in the treatment of CINV in several investigations. Blocking neurotransmitter receptors such as dopaminergic at D1, D2, D3, and D4 brain receptors, serotonergic at, 5-HT3, and 5-HT6 receptors, catecholamine's at alpha1 adrenergic receptors, acetylcholine at muscarinic receptors, and histamine at H1 receptors is the pharmacological mechanism of action. The management of breakthrough and refractory chemotherapy-induced nausea and vomiting is discussed in this article, with a focus on olanzapine. The role of olanzapine in 50 gynaecologic cancer patients receiving cisplatin-based chemotherapy who had nausea despite conventional therapy is investigated retrospectively.