PALONOSETRON VERSUS OTHER 5-HT3-RECEPTOR ANTAGONISTS IN PREVENTING CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING IN PATIENTS WITH CANCER TREATED IN A HOSPITAL OUTPATIENT SETTING

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OBJECTIVES: To explore the risk of uncontrolled chemotherapy-induced nausea and vomiting (CINV) associated with palonosetron (a 5-hydroxy tryptamine,-receptor antagonist [5-HT3-R]) initiation versus other 5-HT3-Rs among patients with cancer on chemotherapy (CT) treatment in a hospital outpatient setting. METHODS: Patients with a cancer diagnosis initiating CT and anti-emetic prophylaxis with palonosetron (Group 1) and 5-HT3-Rs (Group 2) for first time (index date) between April 1, 2007 and March 31, 2009 were identified from the Premier Perspective (TM) Database. Inclusion criteria were patients aged ≥ 18 years, no evidence of nausea and vomiting or a hospital charge for a CT or anti-emetic medication in the 6-month pre-index date period, and 36 consecutive months of hospital data submission. Patients were followed through eight CT cycles or 6 months post-index date, whichever occurred first. A negative binomial distribution-generalized linear multivariate regression model estimated the number of CINV events on CT-matched groups in the follow-up period adjusted after adjusting for several demographic and clinical variables. RESULTS: Of 9144 identified patients, 1773 initiated palonosetron (Group 1; 19.4%). Group 1 patients were significantly younger [61.2 [SD: 13.0] vs. 65.7 [SD: 11.8]; P = 0.0001], comprised more females (52.3% vs. 41.1%; P < 0.0001), had lower comorbidity index (2.1 vs. 2.2; P = 0.0014), and had more gaps between administrations (18.5 vs. 17.4; P = 0.0204). Unadjusted subsequent CINV rate was higher in the Group 1 cohort (52.3% vs. 24.2%; P < 0.0001). After controlling for covariates, Group 1 patients were 3.5 times more likely to have a subsequent CINV compared to Group 2 patients (odds ratio [OR]: 3.48 [95% CI: 2.81-4.30]; P < 0.0001). 5-HT3-Rs (Group 2) were associated with lower CINV index date (RR: 0.81 [95% CI: 0.71–0.93; P = 0.0001]) and delayed (RR = 0.79; CI 95% = 0.70 to 0.86; P < 0.0001) than palonosetron (Group 1). CONCLUSIONS: In this retrospective hospital outpatient study, patients with cancer initiated on palonosetron were more likely to experience a significantly lower rate of CINV events versus those initiating other 5-HT3-Rs.

CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING EVENTS BY CHEMOTHERAPY EMETOGENICITY IN PATIENTS WITH CANCER TREATED IN A HOSPITAL OUTPATIENT SETTING

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OBJECTIVES: To characterize the changes in chemotherapy-induced nausea and vomiting (CINV) events by chemotherapy emetogenicity among patients with cancer initiating CT treatment in a hospital outpatient setting. METHODS: Patients with cancer initiating CT for the first time (index date) between April 1, 2007 and March 31, 2009 were extracted from the Premier Perspective comparative database. Patients aged ≥ 18 years, no evidence of nausea and vomiting or a hospital charge for a CT agent or anti-emetic medication in the 6-month pre-index period, and 36 consecutive months of hospital data submission were included. Patients were followed through eight CT cycles or 6 months post-index date, whichever occurred first. CT was categorized as highly emetogenic (HEC), moderately emetogenic (MEC), low emetogenic (LEC), or minimal emetogenic (MiniEC) per National Comprehensive Cancer Network guidelines. A descriptive analysis of changes in CINV events (either a diagnosis of nausea and/or vomiting or evidence of CINV-related medications) per CT cycle was performed in the follow-up period. RESULTS: The overall study population (N = 11,495) had an average age of 63.3 years (SD 13.4), was 50.7% female, and 86% white. Most common tumor types were lung (19.8%), breast (19.3% vs. 15.3%; P < 0.0001), and urinary tract (13.8%). Use of HEC (cycle 1: 26.0% vs. study end: 9.8%; P < 0.0001), LEC (26.4% vs. 27.8%; P < 0.0001), and MiniEC (3.2% vs. 2.4%; P < 0.0001) decreased over the follow-up period. Change in CINV events from cycle 1 to study end was also statistically significant between groups (HEC [-2.2%] vs. MEC [+1.5%] vs. LEC [+1.4%] vs. MiniEC [-0.8%]; P < 0.0001). CONCLUSIONS: In this retrospective hospital outpatient study, patients with cancer initiated on palonosetron experienced significantly higher CINV events over time versus HEC-initiated patients.

RESULT 4

PCN2

Efficacy of palonosetron (Pal) compared to other serotonin inhibitors (5-HT3R) in preventing chemotherapy-induced nausea and vomiting (CINV) in patients receiving moderately or highly emetogenic (MHE) treatment: an update of the previously published systematic review and meta-analysis

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OBJECTIVES: To perform an update of the previously published systematic review and meta-analysis (Engel T. et al. ISPOR 2009) of all randomized controlled trials comparing a single intravenous dose of PAL 0.25 mg with other 5-HT3-Rs in patients receiving MHE chemotherapy. METHODS: Several databases were searched, including MEDLINE, EMBASE, LILACS, and CENTRAL. The primary end points were the incidence of acute and delayed nausea and vomiting. The adverse events of each treatment were analyzed. A subgroup analysis was performed to evaluate the impact of the use of concomitant corticosteroids. The results are expressed as risk ratio (RR) and the corresponding 95% confidence interval (CI). RESULTS: Six studies were included, comprising 2201 patients. PAL was compared to Ondansetron, Granisetron, and Dolasetron. Patients in the PAL group had less nausea, both acute (RR = 0.86; 95% CI = 0.76 to 0.96; P < 0.0001) and delayed (RR = 0.79; CI 95% = 0.70 to 0.86; P < 0.0001). There were no statistical differences in adverse events like headache (RR = 0.84; 95% CI = 0.61 to 1.47; P = 0.30), dizziness (RR = 0.40; 95% CI = 0.13 to 1.27; P = 0.12), constipation (RR = 1.29; 95% CI = 0.77 to 2.17; P = 0.33), or diarrhea (RR = 0.67; 95% CI = 0.24 to 1.85; P = 0.44). Patients receiving PAL presented less nausea and vomiting regardless of the use of corticosteroids. CONCLUSIONS: PAL was more effective than the other 5-HT3-Rs in preventing acute and delayed CINV in patients receiving MHE treatments, regardless of the use of concomitant corticosteroids.

PCN3

Preserved antitumor activity and reduced cardiotoxicity of first-line pegylated liposomal doxorubicin compared with conventional doxorubicin in patients with metastatic breast cancer

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OBJECTIVES: Doxorubicin is an anthracycline used in the treatment of breast cancer, but its use is limited by cumulative dose-dependent cardiotoxicity. Pegylated liposomal doxorubicin is a novel drug delivery system that alters biodistribution of doxorubicin resulting in reduced cardiotoxicity. Our aim is to compare the efficacy and cardiotoxicity of pegylated liposomal doxorubicin and conventional doxorubicin in first-line treatment of metastatic breast cancer (MBC). METHODS: The literature databases (Cochrane Library, EMBASE, and PUBMED) were searched from inception to May 2020 for randomized controlled trials assessing the efficacy of pegylated liposomal doxorubicin compared to conventional doxorubicin in first-line treatment of MBC were included. Two reviewers independently selected trials, assessed quality, and extracted data, and a third reviewer resolved discrepancies. The fixed effects meta-analysis was performed in STATA 9.0 using a standard meta-analysis approach. RESULTS: Two studies assessing pegylated liposomal doxorubicin with conventional doxorubicin for first-line treatment of MBC met the study criteria. Overall survival (HR = 0.869 [95% CI; 0.729, 1.049]) and overall response rate (RR = 0.908 [95% CI; 0.725, 1.139]) were comparable between the two arms. Treatment with pegylated liposomal doxorubicin resulted in significant reduction in cardiotoxicity as compared to conventional doxorubicin (RR = 0.312 [95% CI; 0.198, 0.490]). The results of random effect analysis were similar (data not shown). CONCLUSIONS: Pegylated liposomal doxorubicin is superior to conventional MEC and analysis approach and is better tolerated as compared to conventional doxorubicin in the treatment of MBC. Thus, the liposomal drug delivery system can play a significant role in the use of doxorubicin in MBC treatment which is otherwise limited by its cardiotoxicity and supports its use in first-line treatment of MBC.