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ISoP18-1171 Cox Selectivity and Chemical Subgroup of Non-steroidal Anti-inflammatory Drugs and Frequency of Spontaneous Reporting of Hypersensitivity Reactions

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Background/Introduction: Use of non-steroidal anti-inflammatory drugs (NSAIDs) has been associated with many adverse events, including hypersensitivity reactions (HSRs), such as angioedema and urticaria. However, no studies have investigated whether cyclooxygenase (COX) enzyme selectivity and/or chemical subgroups are associated with a difference in HSRs.
Objective/Aim: to describe and compare the frequency of HSRs among NSAIDs based on cyclooxygenase selectivity and chemical subgroups.
Methods: A case/non-case study was performed using data from the World Health Organization global database of Individual Case Safety Report (ICSR), VigiBase, containing over 13 million ICSRs submitted by the participating member states enrolled under WHO's international drug monitoring program by June 2016. This study was nested among ICSRs where NSAIDs were a suspected drug. Cases were ICSRs mentioning HSRs (urticaria, angioedema, anaphylactic shock, anaphylactic reaction, anaphylactoid shock, and anaphylactoid reaction), whereas non-cases were all ICSRs without HSRs. Based on the ratio of inhibitory concentration 80% of COX-1/COX-2, NSAIDs were categorized into coxibs, non-coxib NSAIDs with COX-2 preference, NSAIDs with poor selectivity, and NSAIDs with unknown selectivity. Only ICSRs with complete information on age and sex, and NSAIDs with first market authorization from 1978 onward were included. RORs and 95% confidence intervals (95% CIs) to assess the association between NSAIDs and the reporting of HSRs were calculated using logistic regression analysis.
Results: We identified 16,289 HSR cases and 160,319 non-cases among ICSRs involving NSAIDs. Non-coxib NSAIDs with COX-2 preference, NSAIDs with poor selectivity, and NSAIDs with unknown selectivity were all associated with an increased reporting of HSRs (age- and sex-adjusted ROR 1.70, 95% CI 1.61–1.79, age- and sex-adjusted 2.19, 95% CI 2.11–2.77, and age- and sex-adjusted 1.26, 95% CI: 1.03–1.54, respectively) compared to coxibs.
Conclusion: HSRs were more often reported for NSAIDs with poor selectivity, non-coxib NSAID with COX-2 preference, and NSAIDs with unknown selectivity compared to coxibs.
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ISoP18-1172 The Impact of Antihypertensive Drugs on Serum Potassium and Sodium Levels in Patients Electively Admitted to a Tertiary Hospital

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Background/Introduction: Abnormal serum potassium and sodium levels may lead to serious cardiovascular and neurological conditions.
Objective/Aim: To investigate the association between the use of different antihypertensives and the risk of developing disturbances in potassium and sodium serum levels.
Methods: A cross-sectional study was conducted in antihypertensive users, electively admitted to the University Medical Center Utrecht between January 2013 and September 2016. Data on patient characteristics, antihypertensives, and electrolyte levels where extracted from the Utrecht Patient Oriented Database. The association between the use of different antihypertensives and the electrolyte level was studied using linear and logistic regression.
Results: A total of 6369 elective admissions were included in this study. The most frequent electrolyte disorder was hyponatremia (29.5%), followed by hypokalemia (20.5%). Hyperkalemia (3.4%) and especially hypernatremia (0.1%) were less common. In comparison to the use of monotherapy of beta-blockers, use of monotherapy of calcium antagonists (adj. OR 3.08; 95% CI 2.13, 4.46), thiazide or thiazide-like (adj. OR 2.08; 95% CI 1.14, 3.82) and loop diuretics (adj. OR 1.92; 95% CI 1.13, 3.28) was significantly associated with higher odds of hypokalemia. Most combinations of antihypertensives with thiazide or thiazide-like or loop diuretics were significantly associated with lower potassium serum levels compared to monotherapy of beta-blockers. None of the antihypertensive therapies were significantly associated with hyperkalemia. Monotherapy of potassium sparing diuretics (adj. OR 2.72; 95% CI 1.11, 6.66) and angiotensin receptor blockers (adj. OR 1.63; 95% CI 1.01, 2.63), and some of the combinations with a thiazide or thiazide-like or loop diuretic were significantly associated with higher odds of hyponatremia.
Conclusion: Monitoring of serum potassium and sodium levels should be encouraged in patients with antihypertensive drugs especially antihypertensives inducing hyponatremia or hypokalemia to avoid possible severe consequences of abnormal serum potassium and sodium levels.
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