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The prevalence of Clopidogrel and proton pump inhibitors co-prescribing among patients in a number of Jordanian hospitals: A cross-sectional study

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Background: Clopidogrel is considered one of the most important drugs used either alone or in combination with aspirin to reduce the risk of major cardiovascular conditions including heart diseases and stroke and in patients who receive coronary stents after myocardial infarction. Recent studies have shown that Clopidogrel efficacy might be affected by co-prescribing of proton pump inhibitors (PPIs), such as Omeprazole and Esomeprazole as they inhibit the CYP2C19 enzyme, which is necessary for Clopidogrel biotransformation and activation in the body. So, co-administration of both drugs might decrease the Clopidogrel antiplatelet activity and sub-therapeutic effects in those patients who use Clopidogrel.

Objective: The main objective of our study is to evaluate the prevalence of co-prescribing of both Clopidogrel and PPIs among patients who are treated in a number of Jordanian hospitals (Albashir Hospital, King Abdullah University Hospital, Al-Karak Hospital and Prince Hamza Hospital).

Method: It is a cross-sectional study conducted over a period of 100 days. It involves a total number of 18303 patients from both genders who have visited the outpatient pharmacies in the above mentioned hospitals.

Results: Of 18303 patient's records studied, a total number of 438 patients were prescribed Clopidogrel, of which 238 were prescribed Aspirin also and 103 patients had received Clopidogrel and PPIs (any) together. Among those who were prescribed Clopidogrel and PPIs, 82 patients received Lansoprazole, 6 patients received Esomeprazole and 15 patients received Omeprazole. We further categorized the patients who are taking Clopidogrel and PPIs based on their diabetic status as diabetes, known to increase the risk of cardiovascular conditions. A total number of 25 and 78 patients who received the combination of Clopidogrel and PPI (any) were diabetic and non-diabetic, respectively.

Conclusion: A large number of patients were prescribed a combination therapy of Clopidogrel and PPIs (any). It is very important to either quit such co-prescribing behavior, especially, when they are not necessary (e.g., using Clopidogrel alone without Aspirin). Also, using the PPIs with the lowest inhibitory effect on CYP2C19, such as Pantoprazole and Rabeprazole are considered to be better alternatives.

Biography

Ahmad Al-Azayzih is currently working as an Assistant Professor in the Department of Clinical Pharmacy at Jordan University of Science and Technology. His current research projects focuses on understanding the molecular mechanisms governing prostate and bladder cancer progression, tumor angiogenesis and metastasis and identifying newer therapeutics strategies to manage both cancers. He has received his Doctor of Pharmacy degree from Jordan University of Science and Technology and PhD in Clinical and Experimental Therapeutics from the University of Georgia, College of Pharmacy. He is board certified in Oncology Pharmacy. He has also authored 12 original research publications in various journals including *Biochemical Biophysical Acta*, *Nanomedicine*, *Journal of Biological Chemistry*, *Journal of Clinical and Experimental Therapeutics*, etc., and received several awards for research and academic excellence.

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