Assessment of drug interactions and their associated factors among patients with cardiovascular diseases: a cross-sectional study from the occupied Palestinian territory

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Abstract

Background Cardiovascular diseases (CVDs) are the leading cause of death in the West Bank and worldwide. Potential drug–drug interactions (pDDIs) contribute to a significant proportion of adverse drug reactions, which have been shown to be a major cause of morbidity and mortality. Patients with CVD require more attention regarding these interactions owing to the complexity of their conditions and therapeutic regimens. The purpose of this study was to assess the prevalence and types of pDDIs, and their associated factors in patients with CVD.

Methods A cross-sectional study was conducted at two large referral hospitals for patients with CVD in the northern West Bank. Inpatients who were diagnosed with any CVD during the period of the study (from Sept 1, 2016, to Feb 28, 2017) were selected by convenience sampling. Data were collected from patients' medical records and in a face-to-face interview with each of the patients (by use of a standardised data collection form). The sample size was calculated using the Raosoft calculator. pDDIs between medications prescribed at discharge were identified using the Lexicomp interaction checker. Data were analysed with SPSS version 16.

Findings The study included 400 patients with CVDs. According to the Lexicomp interaction checker, 94% (375 of 400) of the patients were discharged with medications with pDDIs. Patients had an average of 3·14 (SD 1·41) diseases, and were prescribed 1–16 medications on discharge (mean 7·08, SD 2·76). The most common comorbid disease was diabetes (in 51% of patients; 205 of 400), followed by chronic kidney disease (in 14% of patients; 56 of 400). Aspirin was the most frequently prescribed medication. The most frequent pDDI was furosemide and aspirin, which were prescribed simultaneously for 37% of patients (148 of 400), followed by angiotensin-converting-enzyme inhibitor and aspirin, which were prescribed simultaneously for 33% of patients (131 of 400), and statins and proton pump inhibitors, which were prescribed simultaneously for 32% of patients (129 of 400). The number of pDDIs was associated with the number of diseases ($p<0·0001$), the total number of discharge medications ($p<0·0001$), and the length of hospital stay ($p=0·0012$).

Interpretation The prevalence of pDDIs is very high among discharge medications for patients with CVDs. These interactions were associated with the number of diseases, the number of medications prescribed, and the length of hospital stay. Monitoring for pDDIs should be performed regularly. To prevent the risks of pDDIs, work is required to raise awareness, and clinical pharmacists should be involved in reviewing medications at discharge.

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Contributors
SWA-J, SZ, and WS conceived the study. SWA-J led the study design, data analysis, data interpretation, and drafting of the manuscript. LA, LA-A, and MT participated in the study design, interviewed patients, and participated in data interpretation and drafting of the manuscript. SHZ and WMS participated in the study design and revised the manuscript.

Declaration of interests
We declare no competing interests.