Risk Factors of Drug Related Problems in Patients Undergoing Coronary Angiography

Bruria Hirsch [1,2], Shlomit Goren [1], Amnon Hoffman [2], Chaim Lotan [1], Haim Danenberg [1]

[1] *Cardiology Department, Hadassah Hebrew University Medical Center, Jerusalem, Israel,*
[2] *School of Pharmacy, Hebrew University, Jerusalem, Israel*

Background: Drug-related problems (DRP) are a major cause of morbidity and mortality. Patients undergoing coronary angiography are often treated with complex therapy and are prone for DRP. The present study evaluated the frequency and types of DRPs in patients undergoing coronary angiography.

Methods and Results: 300 consecutive patients undergoing coronary angiography were interviewed and surveyed by a clinical pharmacist and a cardiologist. A total of 146 DRPs were detected in 100 patients (33.3%). Patients with DRPs were often treated with poly-pharmacy (7.7±3.0 vs. 6.1±1.9 drugs/patient in patients without DRP), less with beta blockers (82.5 vs. 68.0%, $p<0.01$) and with more antiglycemics (54 vs. 20.5%, $p<0.01$) and anti rejection agents (12 vs. 0%, $p<0.01$). The most common DRP was lack of prescribed drug for an unequivocal indication (40.4 %). Low dosage or frequency and drug regimes that are inappropriate to renal function were both present in 11.6%. There was no difference in DRP occurrence between ambulatory and hospitalized patients, as well as no gender differences. Twelve transplanted patients were included in this cohort with a rate of 2, vs. 1.39 DRP/patient in non-transplanted patients ($0.05<p$). The major DRP was again lack of prescribed drug (41.6%) followed by inappropriate dosing to renal function

***Conclusions*:** DRPs are common among patients undergoing coronary angiography. Risk factors to DRP, in addition to poly-pharmacy, are renal failure, diabetes mellitus and previous organ transplantation. Screening at the coronary cathlab for DRPs is simple, and with prompt intervention may be valuable in reducing drug-related morbidity and mortality.