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Drug-drug interactions in patients with cardiovascular diseases

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BACKGROUND:

Medication reconciliation (MedRec) is the process of comparing a patient's medication orders to all of the medications that the patient has been taking. This reconciliation is done to avoid medication errors such as drug interactions. The World Health Organization has recognized MedRec as a recommended standard of quality in health assistance.

OBJECTIVES:

The aim of this analysis was to estimate the prevalence of patients exposed to potentially relevant drug-drug interaction (DDI) at hospital discharge.

METHODS:

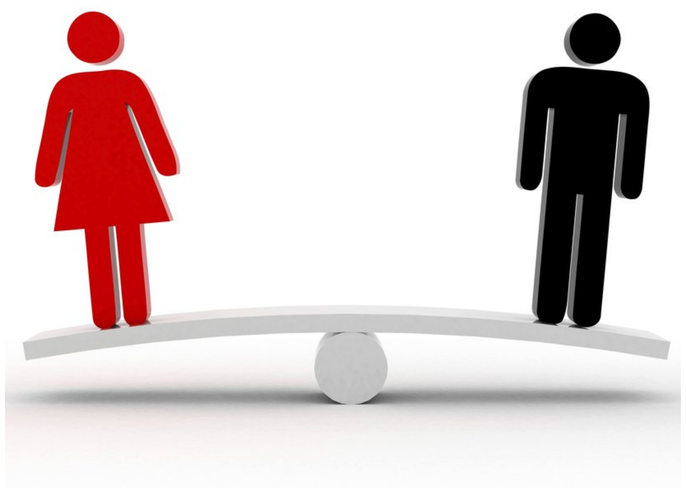
This was an observational retrospective study involving patients with cardiovascular diseases discharged from our Hospital between December 2016 and May 2017. A total of 1033 patients were included in this study and 8005 drug prescriptions at discharge were analyzed (7.75 per patient). DDIs were classified as moderate (pharmacological effects must be controlled by individual dose adjustment or on basis of drug plasma concentration) or severe (drug combination should be avoided in clinical practice).

RESULTS AND DISCUSSION:

Among 1033 patients included, 271 (26.2%) were exposed to at least one potential DDI. A total of 445 DDIs were recorded, 75.1% were classified as moderate and 24.9% as severe interactions. The median number of DDIs per patients with interactions was 1.6 (range 1-7). The most frequent severe interaction was the combination of some Selective serotonin reuptake inhibitors (Paroxetine, Sertraline and Citalopram) and Furosemide (n=46;1%). This combination is known to be associated with an increased risk of cardiotoxicity (QT prolongation and cardiac arrest).

PATIENTS WITH DDI	
Patients included (n)	1033
Patients with interactions (n, %)	271 (26,2%)
Age (mean)	70,94
No. of drugs prescribed at discharge (n, mean)	2702 (9,97)
Patients with 1 DDI (n, %)	173 (16,7%)
Patients with 2 DDIs (n, %)	54 (5,2%)
Patients with 3 DDIs (n, %)	23 (2,2%)
Patients with more than 3 DDIs (n, %)	21 (2,0%)

WOMEN WITH DDI	
Women included (n, %)	308 (29,8%)
Women with interactions (n, %)	99 (36,5%)
Age (mean)	71,51
No. of drugs prescribed at discharge (n, mean)	1012 (10,22)
Women with 1 DDI (n, %)	56 (18,2%)
Women with 2 DDIs (n, %)	20 (6,5%)
Women with 3 DDIs (n, %)	12 (3,9%)
Women with more than 3 DDIs (n, %)	11 (3,6%)
DDIs	
Total DDIs (n, %)	182 (40,9%)
Moderate DDIs (n, %)	131 (72,0%)
Severe DDIs (n, %)	51 (28,0%)



MEN WITH DDI	
Men included (n)	725
Men with interactions (n, %)	172 (23,7%)
Age (mean)	70,6
No. of drugs prescribed at discharge (n, mean)	1690 (9,82)
Men with 1 DDI (n, %)	117 (16,1%)
Men with 2 DDIs (n, %)	34 (4,7%)
Men with 3 DDIs (n, %)	11 (1,5%)
Men with more than 3 DDIs (n, %)	10 (1,4%)
DDIs	
Total DDIs (n, %)	263 (59,1%)
Moderate DDIs (n, %)	203 (77,2%)
Severe DDIs (n, %)	60 (22,8%)

CONCLUSIONS:

From this first analysis it emerged that one-third of our patients was discharged with at least one potential DDI and a remarkable portion of these combinations was severe.
The next step will be to investigate, whether adverse clinical event, readmission or death after discharge could be associated to a potentially severe DDI.
The final target will be the involvement of a clinical pharmacist within a multidisciplinary team to highlight potential DDIs at discharge and minimize the occurrence of related risk.

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