

#### 141. Relationship between Drug-Drug Interactions and Adverse Drug Effects: a Case-Control Study

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**Background:** The elderly use many drugs and are thus exposed to drug-drug interactions (DDIs). However, only some of these DDIs induce adverse drug effects (ADEs).

**Objective:** To estimate the association between DDI and ADE in the elderly.

**Method:** A case-control study nested in a cohort of 2018 subjects aged 70 years and older admitted in an acute geriatric medical unit was carried out between 1994 and 1997. Cases were defined as subjects suffering from an ADE on entrance whether admission was or was not a consequence of the ADE; they were matched with controls on age  $\pm$  2 years and gender. The exposition to DDIs was detected using www.theriaque.org data-base and classified into 4 grades with decreasing levels of severity: absolute contra-indication (ACI), relative contra-indication (RCI), precautionary use (PU) and interaction to be taken into account (ITA). ADEs were analysed by the pharmacovigilance staff. Statistical analysis used Chi square test, Student's t test and logistic regression to estimate the association between DDIs and ADEs.

**Results:** A total of 150 cases and 150 controls was included (age: 85.9 $\pm$ 6.3 years); 75% were women. The prevalence of exposition to DDIs was 65.7%. The repartition of 695 DDIs was as follows: 0.6% ACI, 6% RCI, 38.4% PU and 55% ATA. All 4 subjects with an ACI developed an ADE. The most frequently encountered drugs involved in DDIs were antihypertensive and psychotropic drugs. The most frequently observed ADEs were ionic disorders (39%) and cardiac arrhythmias (38%). After adjustment, the risk of ADEs was associated with DDIs (OR: 2.6; CI 95%: 1.5-4.6), with the number of drugs taken (OR: 1.2; CI 95%: 1.1-1.3) and with dementia (OR: 0.5; CI 95%: 0.2-0.9). ADEs occurrence was associated with the low severity level DDIs, i.e. PU+ITA (OR: 2.5; CI 95%: 1.4-4.3).

**Conclusion:** The risk of ADE when an old patient is exposed to DDIs is important, especially for interactions with a low ranking of severity which are frequently encountered. The classification of DDIs in the elderly, together with frailty is to be considered when ADEs are studied.