

## BACKGROUND

- ❑ The term '**Triple Whammy**' (TW) refers to the risk of acute kidney injury when an angiotensin converting enzyme inhibitors (ACEI) or angiotensin receptor antagonists (ARA), is combined with a diuretic and nonsteroidal anti-inflammatory drugs (NSAIDs).
- ❑ There are also a number of commonly used medicines that can impair renal function for example **digoxin**.

## PURPOSE

- ❑ Evaluate **the frequency** of triple Whammy in patients with Therapeutic Drug Monitoring (TDM) of digoxin and the possibility of developing renal disorder.
- ❑ Analyze **the acceptability** of clinical pharmacist interventions.

## MATERIALS AND METHODS

- ❑ Prospective observational study of non-hospitalized patients with any TDM's digoxin between September and October 2014.
- ❑ Variables collected: demographics (age and gender) and evolution of renal function (Cr).
- ❑ To revise of *pharmacotherapeutic* treatment, serum creatinine (Cr) and serum digoxin concentrations (SDCs)
- ❑ Pharmacist interventions were performed when TW was detected and doctors were informed about this interaction. Recommendations were given to them to avoid it.

## RESULTS

- ✓ n= 90 patients (mean age:81 years; 68,9% women; mean serum creatinines: 1.07 mg/dL)

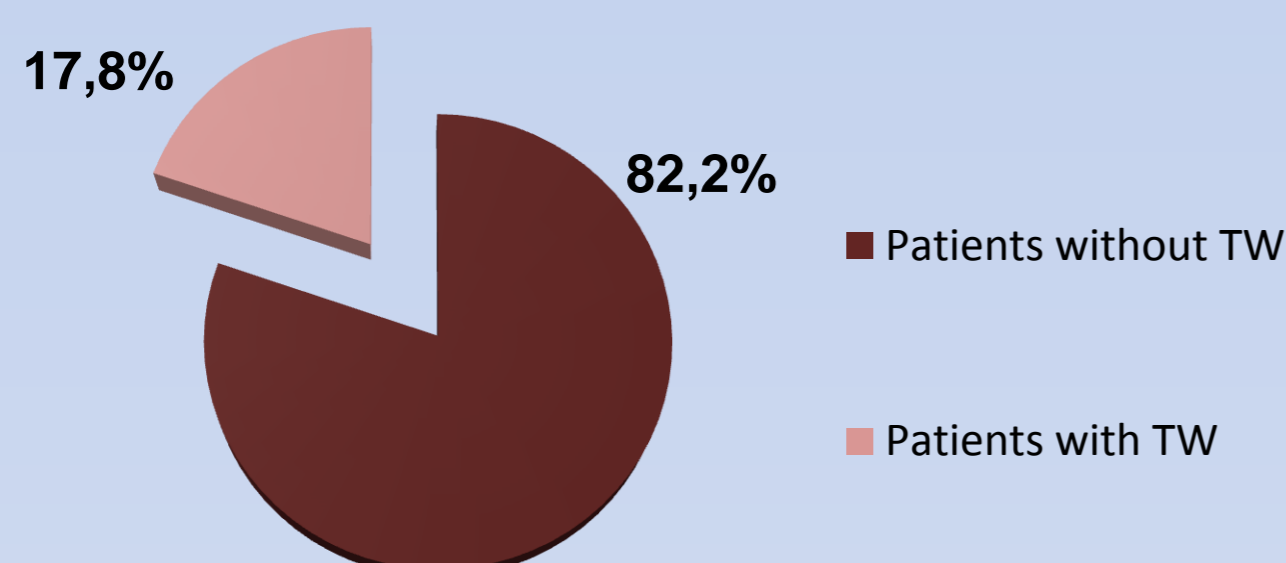


Figura 1: Frequency of TW in the study

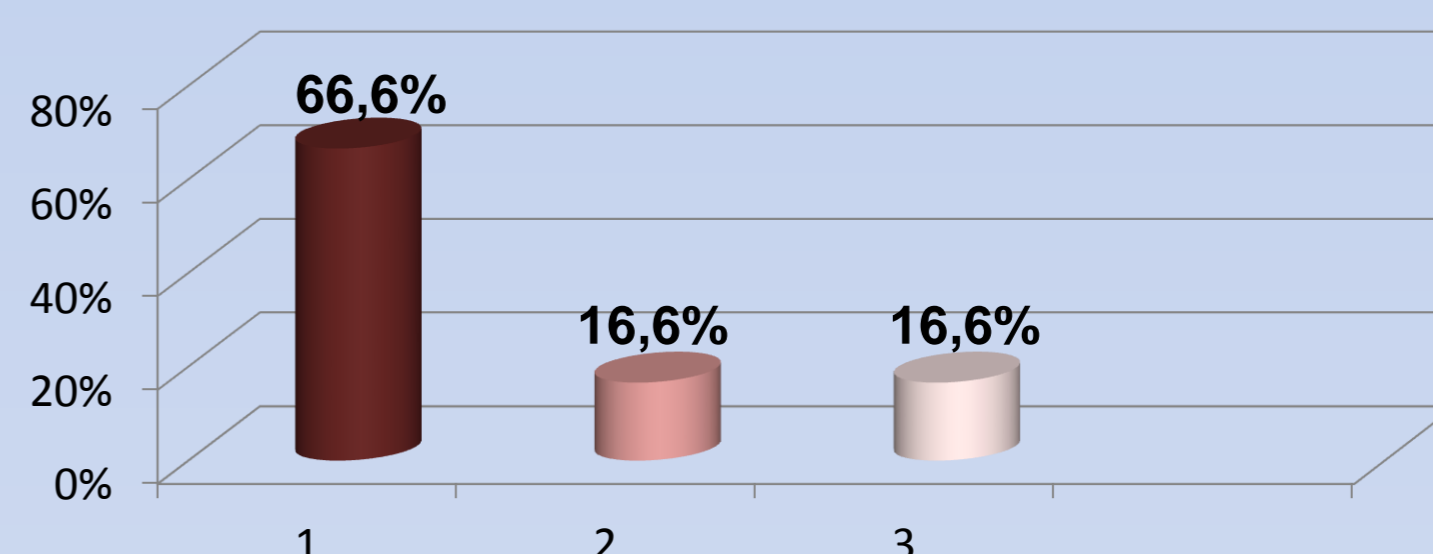


Figura 2: Pharmacist interventions approve

- ❑ TW was observed 16 patients (17.8%)
- 2 TW patients with acute renal failure were hospitalized (Cr:3.75 mg/dL; Cr: 2.07 mg/dL respectively)

- ❑ 6 out of 16 **Pharmacist interventions** performed were approved (37,5%):
  - ✓ 66,6% to switch NSAIDs to paracetamol (1)
  - ✓ 16,6% to change the treatment from ARA II to Calcium Channel Blockers (2)
  - ✓ 16,6% diuretic was withdrawal (3)

- ✓ Mean TDM's digoxin was 0.95ng/ml [0.19ng/mL – 3.61ng/mL]. No statistically significant differences were found between TW patients and the rest of patients.

## CONCLUSIONS

- ❑ **TW is a well-known interaction** and it is documented in the retrieved literature.
- ❑ Nonetheless this association appears **frequently in chronic treatments** therefore it is necessary to implement processes with the aim to avoid TW potential problems.
- ❑ Digoxin routine TDM may be a tool to detect potential drug-related problems as TW association.