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TRIPLE WHAMMY DRUG-DRUG INTERACTION: CLINICAL RELEVANCE AND RESULTS OF PHARMACEUTICAL INTERVENTION.

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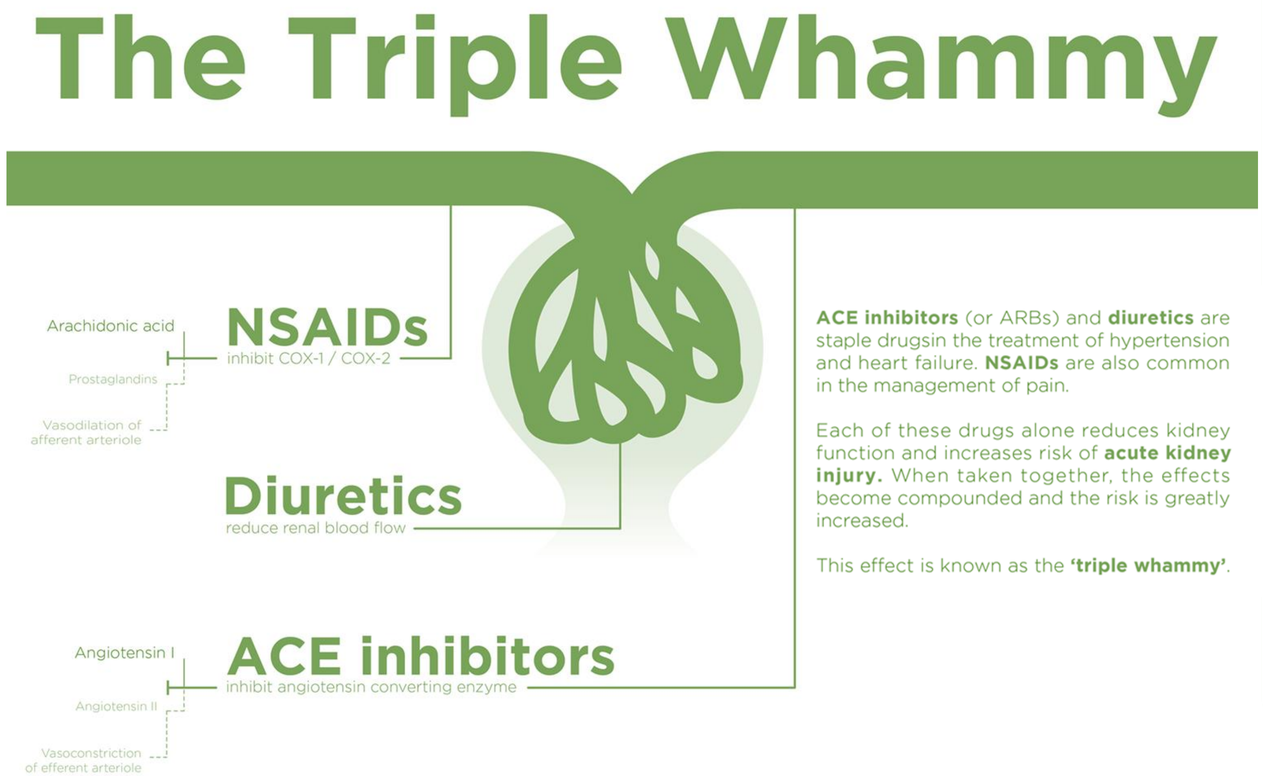
BACKGROUND AND IMPORTANCE

Acute kidney injury (AKI) is a highly prevalent condition among inpatients, usually attributed to pharmacological causes. One of the most clinically relevant drug-drug interactions (DDI) in this context is the triple whammy interaction (TWI), caused by the addition of three potential nephrotoxic groups of drugs: Non-steroidal anti-inflammatory drugs (NSAIDs), diuretics and ACE inhibitors/angiotensin receptor blockers (ARB).

To evaluate clinical significance of the TWI, as well as the role of pharmaceutical intervention (PI) in preventing possible adverse events due to this DDI.



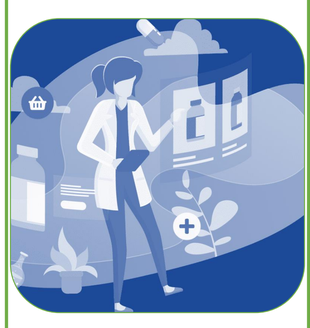
MATERIAL AND METHODS

1.

Observational retrospective study that included patients who were prescribed the TWI over a period of 4 years (2018 to 2022).

2.

Data were collected using computerized medical records, nurse administration registry and PI data base. ICU patients were excluded from this study.



3.

Serum creatinine, potassium were monitorized, and the triple therapy was discontinued in all patients. Incidence of AKI was calculated according to AKIN criteria.

4.

Impact of PI was estimated based on average number of days patients received the combination and amount of time until complete resolution of AKI.

RESULTS

Table 1. Demographic and clinical data of the patients

Variable	Median (range)/N (%)
Age (years)	82 (50-98)
Sex	18 (53%) mujeres
Admission cause • Surgery • Infectious process • Non infecious complications of a chronic disorder • Other	 21 (62%) 5 (14,70%) 47 (20,58%) 1 (3%)
Median basal Serum Creatinine	0,89 (0,73-1,08)
Risk of developing AKI Standar High risk	 4 (12,50%) 30 (87.50%)

1. **Acceptance of PI rate was estimated in 65,62%.**
2. **Incidence of AKI was 29,4% (10/34), 8 of which were classified as AKIN 1.**
3. **Mean duration of the triple therapy was 6,81 days (CI 95% = 3,47-10,15) in non-accepted PI group vs 3,17 days (CI 95% = 2,23-4,11) in the accepted PI group.**
4. **AKI was detected more frequently in accepted PI patients (7/10).**
5. **However, these patients recovered normal renal function faster than patients with no approved PI: 10 days (CI 95% = 5,41-14,58) vs 14,33 days (CI 95% = 8,52 – 20,14), respectively.**

CONCLUSIONS AND RELEVANCE

The TWI can participate in acute kidney injury, particularly in high risk patients.

Clinical pharmacists play an important role detecting patients at increased risk of AKI, preventing adverse events due to TW interaction, monitoring AKI biomarkers and recommending deprescription of possible nephrotoxic drugs.

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