

# ADEQUATE DIGOXIN DOSAGE IN PATIENTS WITH DIGITALIS TOXICITY

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## BACKGROUND

- Digoxin is a high-alert medication because of its narrow therapeutic range and high drug-to-drug interactions.
- Fifty per cent of cases of digoxin toxicity can be prevented by improving treatment with digoxin.

## OBJETIVES

- Checking whether the dosage of digoxin in intoxicated patients accords with clinical guidelines recommendations..

## MATERIAL AND METHODS

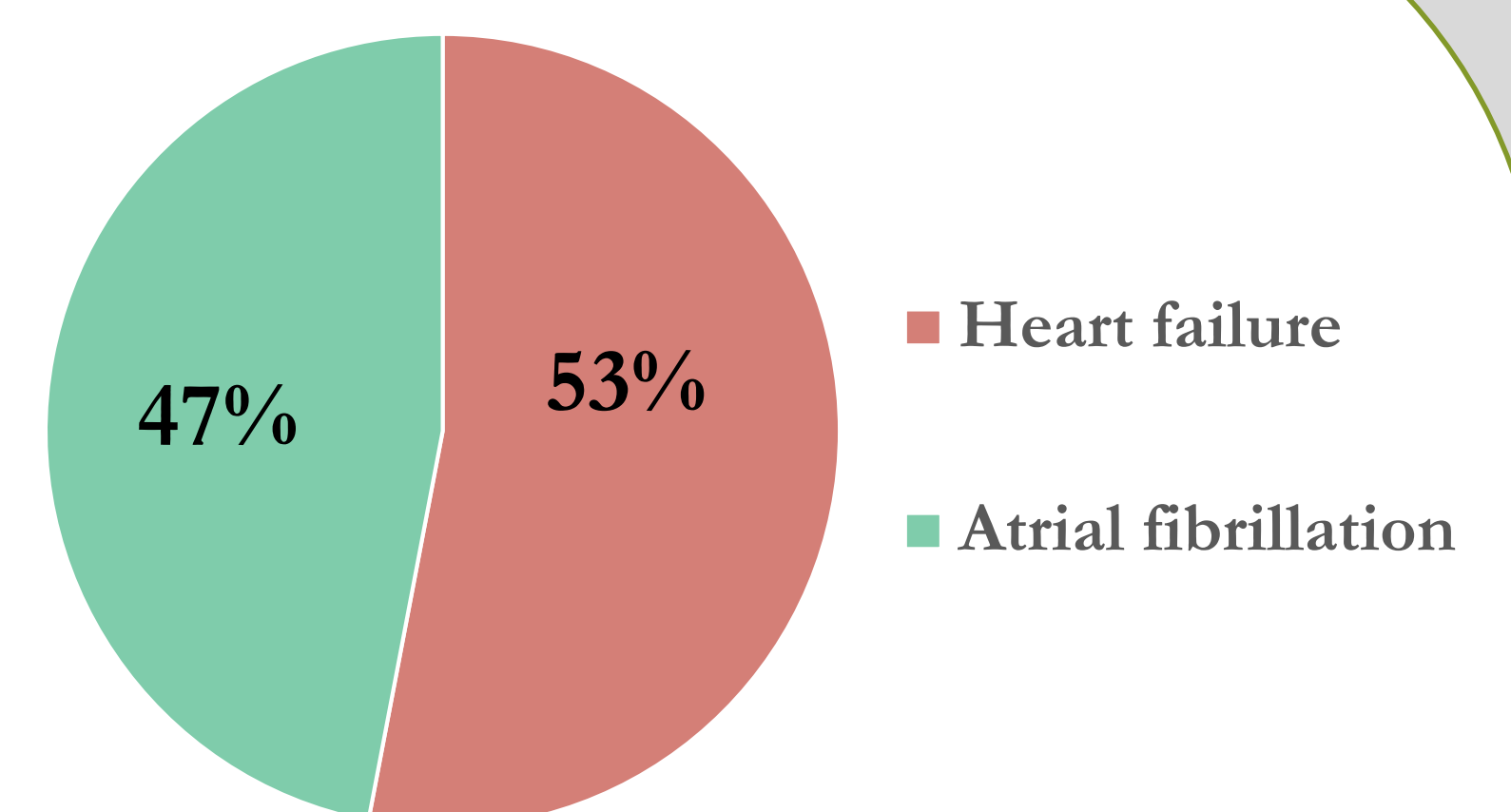
- Retrospective study of patients discharged between 2015–2017, presented as a primary or secondary diagnosis of digitalis toxicity.
- Variables: date of birth, sex, weight, size, diagnosis for treatment with digoxin – atrial fibrillation (AF) or heart failure (HF) – daily dose of digoxin, serum creatinine, digoxinemia and Potasemia [k +] .
- It was estimated whether the dosage of digoxin was correct based on anthropometric data and doses of daily digoxin using PKS.
- For those inadequately dosed patients, daily doses of adequate digoxin were calculated

## RESULTS

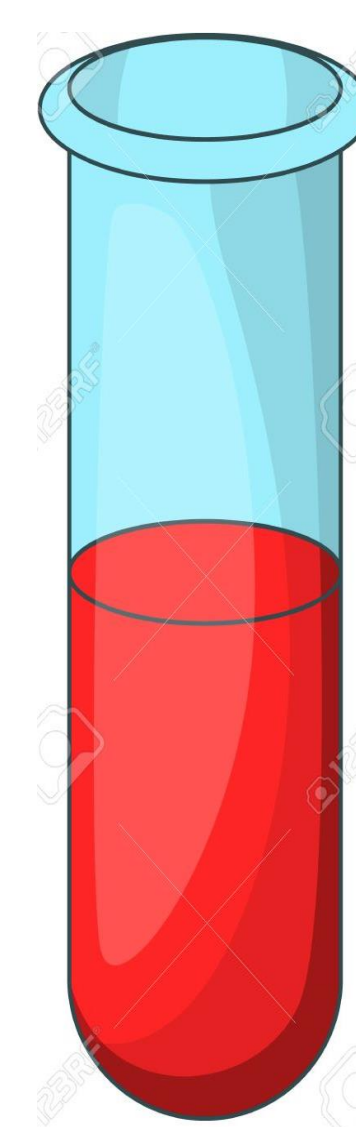
**N = 64**

- 47 females
- Median age: 83.7 years (55–102)
- Median weight: 69.2 kg (45.5–105 kg) with 52% below 70 kg were considered in the dosage recommendations.
- Mean value of GFR 50,65 mL/min (SD=19.9) (77%<60 ml/min)
- 67% [k +] ≤ 4.5 meq/dl

### DIAGNOSIS



Variables	Results
Daily dose of digoxin prior admission	0.163 mg/day (SD=0.06)
Average digoxinaemia at income	2,94 ng/mL (SD=1.36)
Doses estimated to obtain concentrations within therapeutic range	0, 110 mg/dia, 32.4% less than the pre-admission dose.



Only two patients presented with serum digoxin concentrations below 1 ng/ml:  
81% greater than 2 ng/ml.

**The serum digoxin concentrations justified intoxication in most patients**



9 patients met the STOPP criterion of inappropriate prescription for administering doses of digoxin >0.125 mg/day to patients older than 65 years with GFR <50 mL/min.

A significant relationship ( $p < 0,003$ ) was found between dose or level/dose index and patient's GFR.



**No significant differences were found between doses, concentrations or level/dose index of digoxin of patients diagnosed with HF and AF.**

## CONCLUSIONS

- Clinical guidelines recommend evaluating renal function (K +) and serum digoxin concentration, considering the appropriate range for HF (0.6–0.8 ng/dl) and AF (0.8–1.0 ng/dl).
- Control of potassium levels would be insufficient, and doses administered higher than those necessary for the recommended therapeutic range.
- Monitoring of serum digoxin concentrations could reduce digitalis toxicity.