THE IMPORTANCE OF THE EVALUATION OF AMIODARONE'S PLASMATIC CONCENTRATION IN PATIENTS WITH ATRIAL FIBRILLATION

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Background

Atrial fibrillation (AF) is one of the most common sustained cardiac arrhythmia. Amiodarone is one of the most frequently used antiarrhythmic drugs in patients with atrial fibrillation both in prophylaxis and treatment. However, the treatment with this drug results in high healthcare resource use and costs due to its poor safety profile.

Objectives

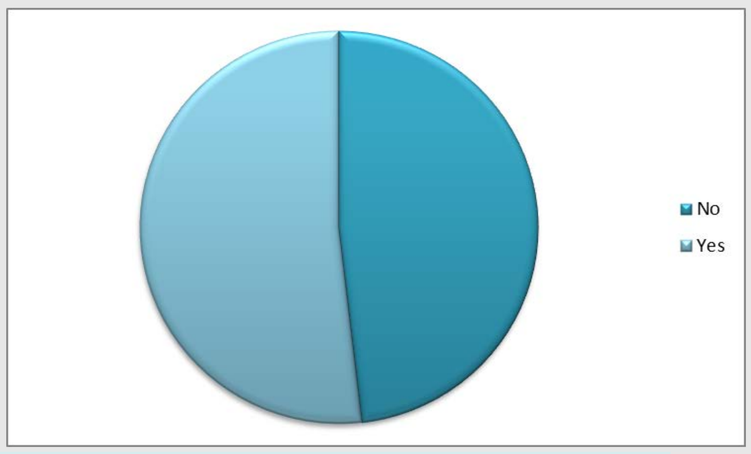
The objective of this study was to assess the plasmatic concentration of amiodarone in patients with AF and also to identify possible factors that could influence it. The results were correlated with used doses, with concomitantly administered drugs, renal and liver function.

Material and methods

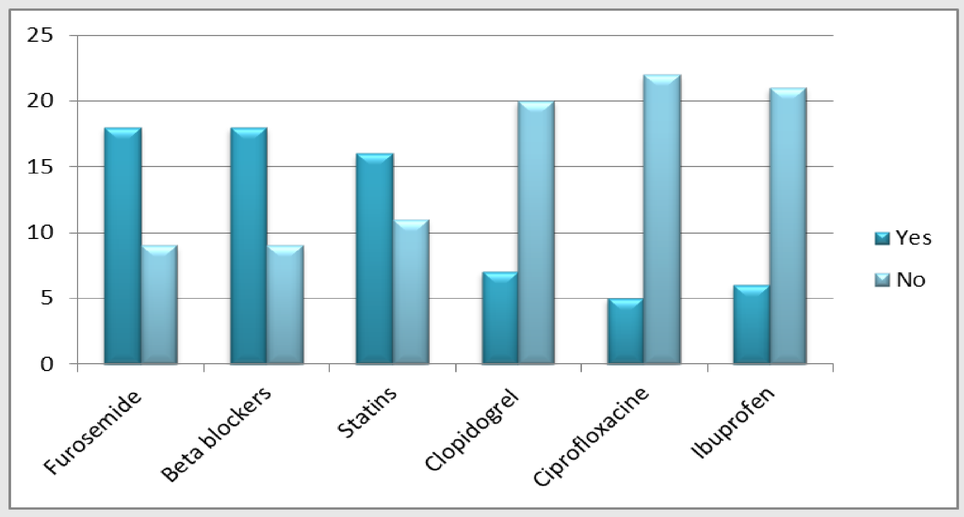
A prospective observational study was conducted in 27 consecutive patients treated with amiodarone from May to July 2017 in a Clinical University Hospital. The patients included met our inclusion criteria. HPLC-MS was the device used to determine the plasma concentration of amiodarone.

Results

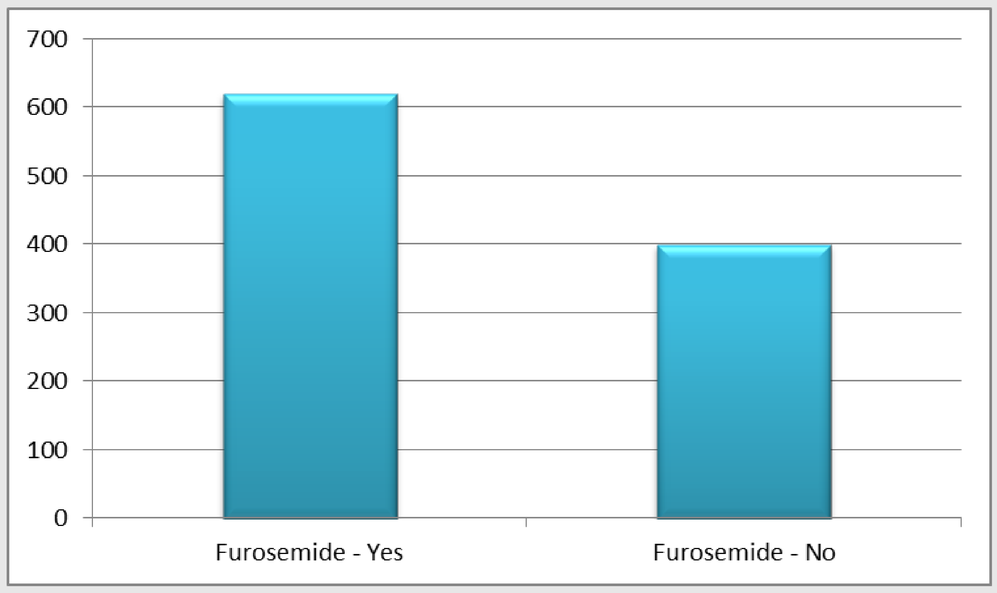
Concentration of amiodarone – therapeutic range



The distribution of the patients according to concomitant medication



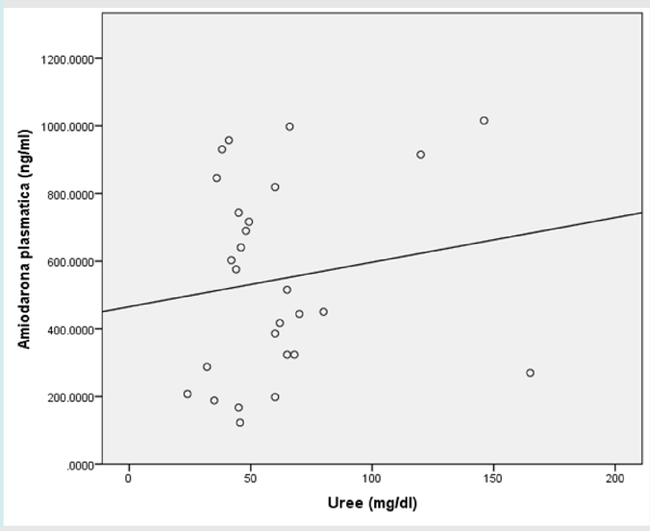
Plasmatic concentration of amiodarone (ng/ml) in patients with/without treatment with furosemide

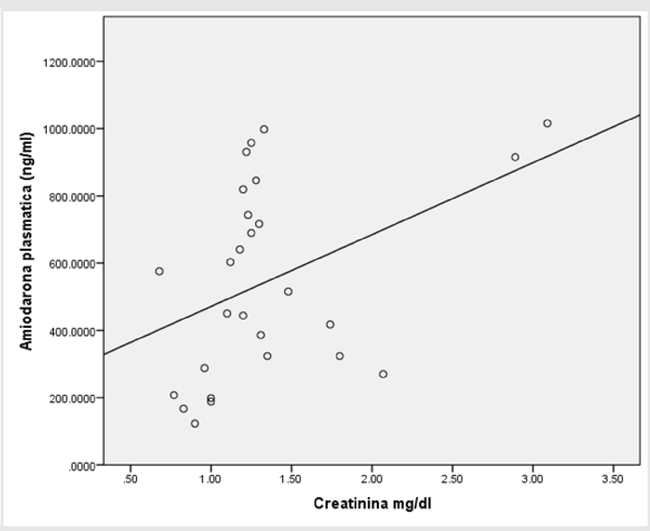


The correlation between plasmatic concentration of amiodarone and BUN/ creatinine

Discussions

- ✓ Amiodarone is a potent inhibitor of organic cationic transporter 2 (OCT2) and creatinine is a substrate for the cation transport pathway comprising OCT2. This may explain the relationship between plasma concentration of amiodarone and renal parameters.
- ✓ Furosemide may decrease MDR status and P-gp expression. In this way, it may influence the pharmacokinetics of P-gp-interfering drugs.
- ✓ Concerning to other drugs administered concomitantly with amiodarone in patients with AF, we did not find significant differences in plasma amiodarone concentration.





Conclusions

We can report an underuse of amiodarone for near 50% of the patients. Also, it was found a significant interaction between furosemide and amiodarone, most likely through the interaction with MDR. Furosemide may influence the pharmacokinetics of P-gp-interfering drugs. However, the relevance of these findings needs to be confirmed and further research is needed to characterize the interaction between amiodarone and furosemide.

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