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Short Communication

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Therapeutic Drug monitoring of digoxin: Value of low therapeutic serum concentrations

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Abstract:

Introduction: Digoxin is a cardiotonic glycoside that belongs to the class of digitalis, used mainly to treat heart failure associated with atrial fibrillation (HF/AF). In view of its very narrow therapeutic margin, its high toxicity, and the great interindividual pharmacokinetic variability, and the risk of drug interactions occurring with chronic treatments in cardiology; a regular dosage of digoxinemia is necessary in order to individualize the doses administered. The objective of this study is to show the interest of the therapeutic drug monitoring of digoxin in heart failure patients while targeting a weak digoxinemia corresponding to a maximum therapeutic effect and a risk of minimal overdose. **Materials and Methods**: This is a prospective study over a period of 5 months in patients with (HF/AF), in the context of a TDM. All patients were treated with digoxin in combination with other cardiology drugs. The collection of information was carried out by means of an information sheet concerning the patient, his clinical and biological state, dosage, date of the start of treatment, date of the last modification of the dosage, the time of sampling and the drugs associated. The digoxinemia assay was carried out by immunoenzymatic method (EMIT) covering a measurement range of 0.5 to 1.2 ng / ml. **Results**: The study involved 38 patients aged between 20 months and 90 years treated with digoxin. The results obtained show that on the one hand, a maximum therapeutic effect was obtained for weak digoxinemias between 0.5 and 0.8 ng / ml, further associating a minimal risk of overdose, and on the other hand, appearance of severe signs of toxicity associating significant disturbances of the cardiac rhythm, from a concentration higher than 1.2 ng / ml. Conclusion: The TDM of digoxin made it possible to adapt the dosage while taking into account the different intra and inter individual variabilities, to optimize the therapeutic response and prevent the occurrence of toxicity. Note that the implementation of a TDM does not only involve the actual dosage of digoxinemia, but extends to a strategy of interpretation and regular monitoring of patients in the long term, requiring a multidisciplinary team working to improve the patient's clinical and biological status.

Biography:

Amina Benaouda has completed her PhD, did her specialty studies in the toxicology service of the HCU of Oran and obtained her diploma of specialized medical studies in toxicology at the age of 29 years from the medical faculty of Tlemcen and obtained her postdoctoral studies from Tlemcen University Algeria. She works at the University Hospital of Tlemcen as a toxicologist and toxicology teacher at the Faculty of Medicine, Pharmacy Department of Tlemcen Algeria.