

## Assessing appropriate dosing of new oral anticoagulants (NOACs): apixaban, dabigatran and rivaroxaban in a tertiary hospital

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### BACKGROUND AND IMPORTANCE

For a long time, vitamin K antagonists (VKAs) such as warfarin and acenocoumarol remained as first-line anticoagulation therapy. Despite their effectiveness and low cost, the need of frequent monitoring and dose adjustments evidenced the importance of introducing in clinical practice new oral anticoagulants (NOACs) in order to increase safety and obtain more predictable results.

### AIM AND OBJECTIVES

The aim of the study was to determine dose adequacy of three new oral anticoagulants prescribed in clinical practice.

① Apixaban    ② Dabigatran    ③ Rivaroxaban

### MATERIALS AND METHODS



An observational prospective study conducted in a tertiary hospital within a six-month period.



All patients with a prescription of apixaban, dabigatran or rivaroxaban were eligible for the study.



Demographic (age, gender, medical history) and clinical (weight, NOAC type and dose, diagnosis and renal function calculated with the MKP-EPI form) data were recorded in a chart and dose adequacy was assessed and reviewed by two different investigators.



Results were analyzed using multivariable logistic regression technique with a 95% significance level.

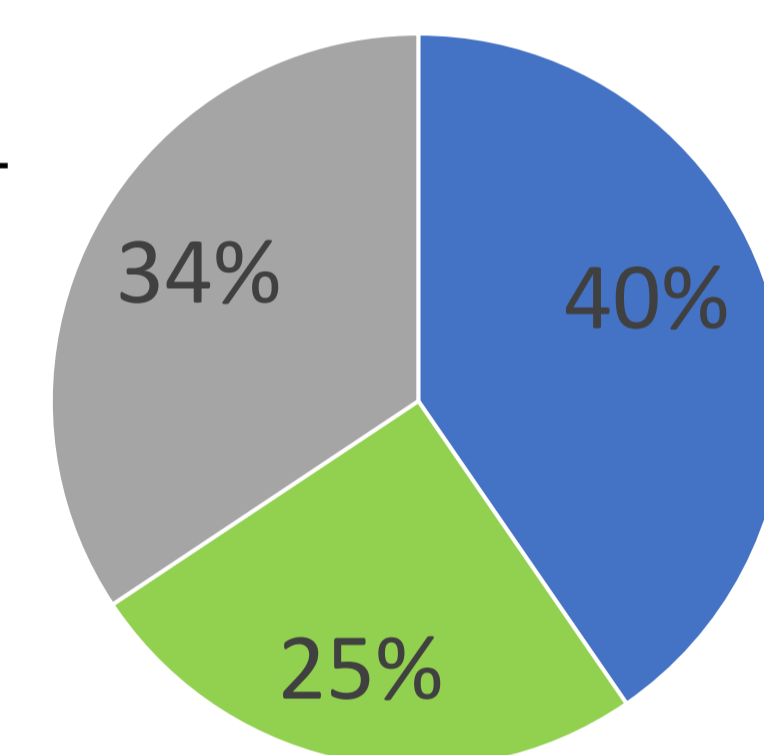


### RESULTS

N=138 56% ♂ and 44% ♀

% NOACs prescribed

■ Apixaban  
■ Dabigatran  
■ Rivaroxaban



The statistical analysis adjusted by sex and age showed that the risk of inadequacy was significant when using apixaban ( $p < 0.001$ , OR: 8.4) and dabigatran ( $p < 0.006$ , OR: 7.0).

This could be explained by the fact that the most prevalent diagnosis was auricular fibrillation. In this indication, rivaroxaban is just adjusted by creatinine clearance while apixaban is adjusted by weight, age, clearance and dabigatran by age, concomitant treatment with verapamile and clearance.

Lower doses were significantly inadequate compared to higher ones (apixaban 2.5mg/12h  $p < 0.000$ , dabigatran 110mg/12h  $p < 0.002$  and rivaroxaban 15mg/12h  $p < 0.036$ ).

Rivaroxaban was the nearest to an adequate prescription.

### CONCLUSION AND RELEVANCE

- At least for auricular fibrillation, **rivaroxaban constitutes the agent with the best adequacy**, probably due to its simpler adjustment.
- With the three drugs **lower doses tend to be less accurate prescribed than higher ones**, what raises the question whether patients were infradosed or not.
- **More training** is needed to correctly prescribe this group of drugs.