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An audit of apixaban prescribing for atrial fibrillation in a hospital setting

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Background

The oral anticoagulant apixaban is becoming a popular first-line option for prevention of stroke and systemic embolism, in adults with non-valvular atrial fibrillation (NVAF) exhibiting one or more risk factors. Two dosage regimens are recommended: 5mg twice daily or 2.5mg twice daily; the latter is deemed appropriate if creatinine clearance (CrCl) 15-29 ml/min or at least two of age \geq 80 years, body weight \leq 60 kg, or serum creatinine \geq 133 micromol/L are satisfied. These criteria derive from results of two large successful clinical trials^{1,2} and have formed the basis of local prescribing guidelines.

Objectives

- To audit against the following standard:
 - 95% of patients prescribed apixaban for NVAF should be assigned a dose in terms of weight, age and renal function in accordance with local guidelines.
- To analyse dose reduction criteria met by patients to ascertain why their prescribed doses were inappropriate
- To identify any significant differences in adherence to guidelines according to gender and age.
- To identify any differences to dose recommendations when different measures of renal function (CrCl based on actual body weight, CrCl based on ideal body weight and estimated Glomerular Filtration Rate [eGFR]) are used.
- To review audit results and make recommendations for future practice.

Method

Patients discharged from cardiology wards between 8th June and 8th December 2015 who were prescribed apixaban for NVAF were included in this audit. A data collection form was developed to gather relevant data, which included age, weight, height, creatinine and eGFR. Data was collected retrospectively using Clinical Portal and Trakcare™. Microsoft Excel and Minitab software were used to analyse compound data and generate relevant statistics. This audit did not require ethics approval.

Results

Of the 104 patients identified, six patients could not be assessed due to missing data. Approximately three quarters (73%) of the remaining patients were prescribed an appropriate dose according to guidelines. No significant differences in adherence rates were found between males and females ($p=0.209$) or between patients aged 80 or over and patients aged 79 or under ($p=0.161$). The majority of patients (68%) prescribed a subtherapeutic dose were aged 80 or over, indicating that age was a potential contributing factor for 'underdosing' patients. There were minor differences in the rates of recommended dose reductions when applying different measures of renal function (range: 21 - 26.5%).

Conclusions

This audit has shown that current evidence-based guidelines are not being fully adhered to, especially when prescribing for elderly patients.

Consequently, these patients are potentially put at risk of subtherapeutic dosing, in turn increasing their probability of stroke. Current published evidence does not justify reducing doses based solely on age, despite anecdotal concerns of local prescribers of an increased risk of haemorrhage.

Prescribers should remain vigilant and document any reasons for dosing the product outside of its licence.

References

1. Granger CB et al. Apixaban versus Warfarin in Patients with Atrial Fibrillation. *New England Journal of Medicine*. 2011; 15; 365 (11):981-92.
2. Connolly SJ et al. Apixaban in Patients with Atrial Fibrillation. *New England Journal of Medicine*. 2011; 364(9):806-17.