

Clinical reviews

Our panel of GPs review recent research papers in their specialist areas that may influence the way you practise

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Cardiovascular disease

Novel bleeding risk score for atrial fibrillation patients treated with DOACs

A new, simple risk score for predicting major bleeding in patients with nonvalvular atrial fibrillation (AF) treated with direct acting oral anticoagulants (DOACs) has been developed by researchers in Israel.

The investigators analysed data from Clalit Health Services, which insures 4.7 million patients (53% of the population) in Israel. They identified all patients aged 40 years and over with nonvalvular AF who had used a DOAC for the first time between November 2013 and the end of 2017.

Patients were followed up from when the initial DOAC prescription was filled until the first occurrence of a major bleeding event, death, a switch to another oral anticoagulant, 30 days after discontinuation of the DOAC or 31 December 2019 when the follow-up period ended.

They developed a major haemorrhage risk scoring tool for patients with AF using demographic and clinical data from a cohort of apixaban initiators. This tool was then applied to two separate cohorts of dabigatran and rivaroxaban initiators.

Overall, there were 47,623 patients

with AF who were prescribed a DOAC. In the first phase of the study, 28,055 patients (48% men) with AF, mean age 78.8 years, who had started apixaban between 2013 and 2017 were included. Of these, 662 had major bleeding events during follow-up.

Nine variables were selected for inclusion in a final points-based risk scoring system:

- Male sex
- Anaemia
- Thrombocytopaenia
- Concurrent antiplatelet therapy
- Hypertension
- Prior major bleeding
- Risk factors for a fall
- Low serum cholesterol
- Low estimated glomerular filtration rate

Applicability of the model was then tested on 14,118 new users of dabigatran and 5,450 new users of rivaroxaban. The score achieved c indices of 0.62 and 0.61, respectively, in the two cohorts which was only slightly lower than the result achieved in the derivation cohort.

AF is a common arrhythmia causing significant morbidity and mortality. The increased risk of thromboembolic stroke is a key component of this and the use of anticoagulants to mitigate against that risk is an integral part of managing AF. The risk of anticoagulant induced bleeding must be carefully assessed and balanced against the perceived risk of thromboembolic stroke.

Scoring systems such as HAS-BLED, ORBIT and ATRIA are all methods of predicting the risk of major bleeding during vitamin K antagonist or antiplatelet therapy. However, the pharmacokinetics of the DOACs differ from the pharmacokinetics of vitamin K antagonists.

The authors of this study have developed a model that should improve the ability to predict major bleeding events in patients with non-valvular AF treated with DOACs. They conclude that this simple and

novel nine variable risk score offers a bleeding prediction tool tailored to non-valvular AF patients on a DOAC.

The authors acknowledge that the risk score will require validation in additional cohorts.

DR PETER SAVILL

Barnett-Griness O, Stein N, Kotler A et al. Novel bleeding prediction model in atrial fibrillation patients on new oral anticoagulants. *Heart* 2022;108:266-73 >>