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Is HAS-BLED score better than CHADS2 and HEMOR2RHAGES schemes in assessing 1 year risk of major bleed in atrial fibrillation patients?

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Is HAS-BLED score better than CHADS2 and HEMOR2RHAGES schemes in assessing 1 year risk of major bleed in Atrial Fibrillation Patients?

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Why is this study important?

Suboptimal administration of oral anticoagulants in patients with atrial fibrillation, in view of bleeding complications, has necessitated the use of a standardized and user-friendly stroke risk stratification method in clinical practice. The issue of deciding on which stroke scale provides the most prognostic information and hence serves as a reliable neurological index is an important one. HAS-BLED, CHADS2 and HEMOR2RHAGES are some of the risk stratification scores which have been serving this purpose with variable success and a review is essential to compare their relative efficacy.

Furthermore, the anti-thrombolytic guidelines in literature lack a fair coverage of atrial fibrillation patients and the risk assessment scores themselves do not target atrial fibrillation patients in particular. This study compares the predictive power of the novel HAS-BLED scheme with preexisting CHADS2 and HEMOR2RHAGES score in cohort of patients with atrial fibrillations undergoing anticoagulation.

An overview of HAS-BLED, CHADS2 and HEMOR2RHAGES) for predicting stroke in Atrial Fibrillation patients and their current state of evidence in literature:

HAS-BLED is an acronym for Hypertension, Abnormal Liver/Kidney Function, Stroke history, Bleeding History/ Labile INR, Elderly (Age >65yrs), Drugs/Alcohol use. HEMOR2RAGES is an acronym for Hepatic or Renal disease, Ethanol abuse, Malignancy, Older age (age >75), Reduced platelet function, Re bleeding, Anemia, Genetic factor (CYP2C9 variant),Excessive fall risk and Stroke. CHADS2 score includes congestive heart failure (C), hypertension (H), age (A), diabetes mellitus (D), and a history of stroke (S)

Who were the study participants?

The Euro Heart Survey on AF recruited 5,333 AF patients form 182 institutes in 35 European countries. Patients, 18 years of age and older with AF documented by Holter or ECG within preceding year were eligible and followed for survival and episodes of major bleeding for 1 year. Co-morbid conditions like abnormal liver function (CLD diagnosed or significantly deranged LFTs), abnormal kidney function (chronic dialysis, transplant patients, baseline Cr $\geq$2.00) and valvular heart diseases were defined and noted.

What were the findings?

Of the 3,456 patients that remained after excluding loss due to non-survival and those with valvular disorders or surgery, 53 (1.5 %) incurred major bleeds within 1 year. In 2,242 patients discharged, 286 (12%) were discharged on OAC and antiplatelets, 828 (24.0%) on antiplatelets alone and 352 were not administered either. The overall c-statistic derivation cohort in population was 0.72 and consistent with the HAS-BLED c-statistic. It is noteworthy that HAS-BLED faired a higher predictive value where antiplatelets therapy was administered alone (c-statistic 0.91) and where no therapy was initiated (c-statistic 0.85). HEMOR2RHAGES score yielded an overall lower predictive value (c statistic 0.66) compared to HAS-BLED (c statistic 0.72). Among the subgroups, HEMOR2RHAGES had a higher predictive value (0.83) compared to HAS-BLED (0.78) for group co administered OAC and antiplatelets.

Of the patients discharged on OAC due to CHADS2 $\geq$1, HAS-BLED accurately predicted high risk for 4 out of 33 (12%) bleeds and overestimated risk in 34 out of 1580 (2.2%) patients in whom bleeding episode did not occur. Of 21 patients, not on therapy, with CHADS2 $\geq$1 and incurring stroke subsequently, 1 was accurately stratified as high risk by HAS-BLED.

What were the conclusions? Is the HAS-BLED scheme better than CHADS2 and HEMOR2RHAGES?

HAS-BLED performed better in predicting bleeding complications compared to others. User friendliness is inherent in this short acronym with ease of all the parameters required for calculating it, readily available. This is particularly important in situations where genetic data is not available to calculate HEMOR2RHAGES score. Where HAS-BLED and

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HEMOR2RHAGES performed equally (baseline c statistic of 0.85 vs 0.81, respectively), the less complicated nature of HAS-BLED sure favours its use in clinical settings. Clinical usefulness of CHADS2 and HEMOR2RHAGES is further limited due to the involvement of factors which predispose to both ischaemic and haemorrhagic events.

How is the study helpful in Pakistani Context?

We need our own measures of safety, however these are still good guidelines

Acknowledgements and Disclosure Statement

There are no conflicts of interest with regards to this review.

Suggested Readings

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