Anticoagulation in AF according to $CHADS_2$ and CHA_2DS_2-VASc scores

$CHADS_2$與 CHA_2DS_2-VASc 積分指引心房顫動抗凝治療

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Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia which increases the risk of ischemic stroke by 4- to 5-fold. AF-related stroke has a worse prognosis and higher recurrence rate compared to non-AF related stroke. The risk of AF-associated stroke is not homogeneous and depends on patients' age and comorbidities, which have resulted in clinical scores to aid risk stratification for AF patients.

The $CHADS_2$ (congestive heart failure, hypertension, age ≥75, diabetes mellitus, and prior stroke or transient ischemic attack [TIA]) score has been commonly used to guide antithrombotic therapies for AF patients since year 2001. However, it classifies a large proportion of patients as being at "intermediate risk" and omits several important thromboembolic risk factors. In year 2010, the CHA_2DS_2-VASc (congestive heart failure, hypertension, age ≥75, diabetes mellitus, prior stroke or transient ischemic attack, vascular disease, age 65–74, female) score, which extends the $CHADS_2$ scheme by considering additional stroke risk factors (vascular diseases and female gender), was developed and has been suggested to be better than $CHADS_2$ score in identifying truly low-risk patients.

Treatments with oral anticoagulants (OAC) with vitamin K antagonists (VKAs), such as warfarin, could effectively reduce the risk of stroke by 64% compared to placebo. In recent years, several non-VKA oral anticoagulants (NOACs), such as dabigatran, rivaroxaban, apixaban and edoxaban, were demonstrated to be at least as effective as warfarin in stroke prevention, and were much safer in the risk of intra-cranial hemorrhage. The great improvements on convenience and safety of NOACs compared to warfarin may lower the threshold for initiating OACs for AF patients. The previous study suggested that anticoagulation with warfarin is preferred at a stroke rate of above 1.7% per year, whilst anticoagulation with 'safer' NOACs leads to a lowering of the threshold for anticoagulation to a stroke rate of 0.9% per year. Therefore, the role of modern risk scoring schemes has shifted to initially identify patients with a truly low-risk of ischemic stroke, in whom OACs were not recommended.

Based on this concept, the CHA_2DS_2-VASc score is the preferred scoring system which should be used for stroke risk prediction in AF. The data from Taiwan nationwide health insurance research database also support the use of CHA_2DS_2-VASc score for stroke risk stratification among Chinese AF patients. OACs and aspirin could be omitted for AF patients with a CHA_2DS_2-VASc score of 0 (males) or 1

(females). For patients with 1 additional risk factor beyond gender (CHA_2DS_2-VASc score of 1 for males and 2 for females), OACs should be considered and NOACs may be the preferred choices based on their better safety profiles. For patients with a CHA_2DS_2-VASc score higher than 2, OACs with either NOACs or well-controlled warfarin should be used unless contraindications are existent.