투석전문의 연수강좌

말기신부전 환자에서 항응고제 사용의 위험과 효과

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Risk and Benefit of Anticoagulation in ESRD Patients

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For patients without end-stage renal disease (ESRD), oral anticoagulants (OAC) are often indicated for prevention of thromboembolic events such as stroke. Because the degree of benefit varies with bleeding risk, several stroke and bleeding risk scores have been developed and validated in the general population to help select patients likely to benefit from therapy. A combination of validated tools such as these permits assessment of the risk-to-benefit ratio of anticoagulant use and aids in guiding therapeutic decisions.

In ESRD patients, however, the risk-to-benefit ratio with OAC is unclear and may be unfavorable in many patients. Hemodialysis (HD) patients are at higher risk of serious bleeding due to several factors including uremic platelet dysfunction, anemia, and heparin use during dialysis. The rate of major bleeding, however, is not well defined in the literature, ranged from 0.10 to 0.54 events per patient-year of exposure in HD patients. Warfarin use was associated with a near doubling of the rate of bleeding. Bleeding risk scores developed for the general non-dialysis population have not been well validated in dialysis patients. This makes assessment of bleeding risk, and calculation of a risk-to-benefit ratio for OAC, difficult. At the same time, there is little direct evidence of benefit for OAC in prevention of stroke, cardiovascular events, or vascular access thrombosis in dialysis patients.

Given these uncertainties, it is not clear whether the indications for antithrombotic agents in dialysis patients can be extrapolated from data in the general population. Despite these concerns, in current practice, OACs are frequently prescribed in dialysis patients for the same indications and with the same expectation of benefit as in the general population.

This topic will present how we can assess the risk-to benefit ratio of anticoagulant use in ESRD patients and will touch the best practice recommendation from the literature review as below.

Anticoagulant use in patients on dialysis (stage 5D chronic kidney disease)

- No anticoagulant therapy is recommended. The CHADS2 score and a history of gastrointestinal bleeding were predictive of stroke and bleeding events, respectively, with bleeding rates substantially exceeding stroke rates in all groups including patients at high stroke risk.

- Anticoagulation with warfarin is suggested for these patients with very high risk predictors for thromboembolism, such as known atrial thrombus, valvular/rheumatic valve disease, and previous transient ischemic attack or stroke.

- Warfarin dosing: Target INR of 2.0 to 3.0 is recommended. Reducing the starting dose of warfarin to 2.5 mg daily was recommended based on an increase in the risk of bleeding during the early period of warfarin anticoagulation. In addition, the INR should be monitored more frequently than usual, particularly during the first 90 days.