mortality and higher quality of life compared with remaining on dialysis. Thus, a full discussion with patients of the risks and benefits of DOACs should include the effect on the patient’s transplant listing status and their ability to receive an organ if offered.

DISCLOSURES

N. Elias reports receiving research funding from Controlled Risk Insurance Company. E. Heher reports having ownership interest in Square Knot Health, Inc.

FUNDING

None.

REFERENCES

4. See related reply on pages 2390–2391, and original article “Safety and Efficacy of Vitamin K Antagonists versus Rivaroxaban in Hemodialysis Patients with Atrial Fibrillation: A Multicenter Randomized Controlled Trial” in Vol. 32, Iss. 6, pages 1474–1483.

Authors’ Reply

Reliable data on reversal of oral factor Xa inhibitors at the time of transplant surgery are lacking. Andexanet alfa, a recombinant variant of human factor Xa, efficiently reduced anti-factor Xa activity in patients with acute major bleeding, but no data exist in the setting of urgent transplant surgery. Alternatively, prothrombin complex concentrates can be used, despite not being specific reversal therapy agents, but published experience at the time of emergency surgery is limited to case reports. A survey of reversal practices among adult transplant programs in the United States indeed revealed that, although 64% of kidney transplant programs allow patients to remain on direct oral anticoagulants (DOAC) while on the transplant waiting list, only 7.8% reported routine use of DOAC reversal agents. This large practice variability calls for more guidance by professional societies, pending reliable research in this context. Taken together, we agree with Heher and Elias that the patient’s transplant listing status should be borne in mind when assessing the risk-benefit ratio of oral anticoagulation in the individual patient receiving hemodialysis.

However, patients with atrial fibrillation who are on hemodialysis are generally old and have a high burden of cardiovascular disease, as reflected by the median CHA2DS2-VASc score of five in our study population. As such, the large majority of these patients will not qualify for registration on the transplant waiting list. A small proportion of patients on hemodialysis with atrial fibrillation but less comorbid disease may be considered for kidney transplantation. In these patients, physicians face the dilemma advocated by Heher and Elias and may prefer vitamin K antagonists rather than DOAC. Oral anticoagulation is officially recommended when patients with atrial fibrillation have CHA2DS2-VASc scores of two or more for men and three or more for women. However, indirect evidence suggests that the CHA2DS2-VASc score overestimates stroke risk in patients on hemodialysis and that anticoagulation initiation should probably be more restrictive than is currently advocated. As such, many of these patients may be better treated without anticoagulation. Therefore, we believe the issue raised by Heher and Elias, although important and valid, applies only to a small minority of patients on dialysis and should not detract from the main message of our paper. We found that rivaroxaban significantly reduced the composite outcome of fatal and nonfatal cardiovascular events and major bleeding complications compared with vitamin K antagonists, and, therefore, submit that DOAC are the anticoagulants of choice in the hemodialysis population.

DISCLOSURES

A.S. De Vriese reports serving as a scientific advisor for, or member of, Ablinyc, Alexion, Amgen, Catenion, and Navigant; having consultancy agreements with Amgen; receiving honoraria from Amgen and Baxter; serving on a speakers bureau for Amgen and Baxter; and receiving research funding from Amgen, Kaydence Pharma, and NattoPharma.

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