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No reason to use bridging therapy with heparin while initiating oral anticoagulation in patients with newly diagnosed atrial fibrillation who have no other thrombotic risk factors.

Bottom Line:

--There is no published evidence indicating that it is beneficial to bridge patients with heparin when initiating warfarin therapy in newly diagnosed atrial fibrillation who have no other thrombotic risk factors.

--There does *not* appear to be a transient hypercoagulable state within the first 60 hours of beginning warfarin in patients with atrial fibrillation (Zeuthen, et al)

Clinical Question:

--In a hospitalized patient with newly diagnosed atrial fibrillation and no other indications for anticoagulation, is there benefit to concurrent use of heparin and warfarin until INR is therapeutic?

The Evidence:

--Zeuthen et al found no significant difference between the effect of oral anticoagulation therapy (warfarin) and LMWH on the relative changes of biochemical markers (prothrombin fragment 1 + 2, soluble fibrin, and D-dimer) at 12, 36, and 60 hours of therapy ($p < 0.04$)

--Bridging therapy in this setting is not part of the clinical guidelines from the Annals of Internal Medicine (Management of Newly Detected Atrial Fibrillation: A Clinical Practice Guideline from the American Academy of Family Physicians and the American College of Physicians, Snow et al; or Management of Atrial Fibrillation: Review of the Evidence for the Role of Pharmacologic Therapy, Electrical Cardioversion, and Echocardiography, McNamara et al)

Comments:

--Warfarin inhibits vitamin K dependent clotting factors (II, VII, IX, and X) as well as proteins C and S, which are important components of inhibition of coagulation. The concentrations of these factors decrease at a rate dependent of their half life. Thus, the theoretic risk is that the decline in proteins C and S while factors II and X are still high (due to longer half life) may lead to a transient hypercoagulable state during the initiation of warfarin therapy. However, according to Zeuthen et al, this does not appear to be the case.

--The risk of stroke in patients with atrial fibrillation with no other thrombotic risk factors is small (about ~2% per year), thus the need to provide anticoagulation with heparin while warfarin becomes therapeutic (~5 days) is probably not necessary.

References:

Zeuthen, et al. Is there a hypercoagulable phase during the initiation of antithrombotic therapy with oral anticoagulants in patients with atrial fibrillation? *Thrombosis Research* 2003; 109: 241-246.

Snow, et al. Management of Newly Detected Atrial Fibrillation: A Clinical Practice Guideline from the American Academy of Family Physicians and the American College of Physicians. *Ann Internal Med* 2003; 139: 1009-1017.

McNamara, et al. Management of Atrial Fibrillation: Review of the Evidence for the Role of Pharmacologic Therapy, Electrical Cardioversion, and Echocardiography. *Ann Internal Med* 2003; 139: 1018-1033.