

ANTICOAGULANT PRIMARY PROPHYLAXIS

DIRECT ORAL ANTICOAGULANTS PROVIDE EFFECTIVE THROMBOPROPHYLAXIS IN NEWLY DIAGNOSED MYELOMA: REAL WORLD FINDINGS FROM THE ATOMM STUDY

T. Bull¹, **Haemstar Collaborators**², **W. Wilson**³, **E. Ganendra**⁴, **M. Thomas**⁵, **R. Alikhan**⁶, **M. Karanth**¹, **M. Camilleri**⁷

¹West Suffolk Hospital NHS Foundation Trust, UK; ²Haematology Specialty Training Audit and Research HaemSTAR Network, UK; ³University College London Clinical Trial Centre, UK; ⁴North West Anglia NHS Foundation Trust, UK; ⁵University College London Hospitals, UK; ⁶Cardiff and Vale University Health Board, Wales, UK; ⁷Cambridge University Hospitals NHS Foundation Trust, UK

Myeloma is a thrombogenic malignancy with guidelines recommending prophylactic-dose low molecular weight heparin (LMWH) in high thrombosis risk patients. Evidence supporting anti-factor Xa direct oral anticoagulants (DOACs) is limited. Anticoagulation for Thrombosis prevention in Multiple Myeloma (ATOMM) is a UK-wide, retrospective observational study funded by Myeloma UK with HaemSTAR support. ATOMM audited thromboprophylaxis use in the first 6 months' treatment of newly diagnosed myeloma patients against guidelines, collecting thrombosis and bleeding rates. Adult patients starting chemotherapy between 1/1/21-1/8/24 were included, excluding those on treatment-dose anticoagulation. Anonymised clinical data from routine records was entered into REDCap. 2,359 patients from 41 centres were included; median age 69 (range 27-100), 58% male, 50.1% transplant-eligible. At presentation, 25.9% had acute kidney injury, 45.6% high-risk cytogenetics, and 78.2% were high-risk for thrombosis (76.2% due to IMiDs, 2% other risks in non-IMiD patients). 1,783 (75.6%) patients received thromboprophylaxis: 69.7% DOAC, 25.2% LMWH, 4.8% aspirin, 0.1% warfarin, and 0.2% unknown. DOAC use increased over the study period, from 51% (2021) to 79.4%

(2024) (Figure). Of 1,798 patients on an IMiD-based regimen, 1,699 (94.4%) received chemical thromboprophylaxis, compared with only 6 of 48 (12.5%) non-IMiD patients at high risk of thrombosis. 75 patients (3.2%) developed thrombosis (60 venous, 15 arterial): 3.1% with prophylaxis vs 3.5% without. LMWH showed a non-statistically significant trend to higher events vs DOACs (4.4% vs 2.7%, $p=0.06$) likely reflecting patient selection, with tunneled lines more common in this group ($p<0.001$). Annual thrombosis rates remained stable despite increased DOAC use: 3.9% (2021), 3.3% (2022), 2.6% (2023), 2.9% (2024). No difference in thrombosis rates was seen between IMiD and non-IMiD regimens ($p=0.6$). 52 (2.2%) patients developed bleeding (20 major, 26 clinically relevant non-major, 6 minor), with no significant difference between DOAC and LMWH, or between patients with/without thromboprophylaxis (2.5% vs 1.4%, $p=0.5$). In real-world UK patients receiving thromboprophylaxis, the rate of thrombosis was 3.1% with a 2.5% bleeding rate. Thrombosis rates did not differ significantly between DOAC and LMWH, remaining low and stable despite the shift from LMWH to DOACs. DOACs provide safe and effective thromboprophylaxis in newly diagnosed myeloma.

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