Prospective audit of Rivaroxaban as prophylaxis and treatment during myeloma therapy with Immunomodulatory drugs (IMiDs) at East Kent Hospitals University NHS Foundation Trust, UK

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The increased risk of venothromboembolism (VTE) associated with IMiD-based (Thalidomide, Lenalidomide or Pomalidomide) treatment is well recognised, but there is no consensus about prophylaxis.

Rivaroxaban is a direct oral factor Xa inhibitor, licenced in the UK for treatment and prevention of recurrence of PE and DVT, stroke reduction in non-valvular atrial fibrillation (AF), and prevention of VTE after hip and knee surgery.

East Kent Hospitals comprises 3 large District General Hospitals serving a population of roughly 750,000. Previously at East Kent Hospitals, we used Aspirin (or Clexane for high risk patients) as prophylaxis along with IMiD-containing treatments but, with the availability of newer direct oral anticoagulants and following two deaths from VTE on aspirin, we now use either Rivaroxaban 10mg po od or Clexane.

Between 2008 and 2015, we have seen 16 clots during IMiD-based therapy (total 203 patients treated): 11 VTE were whilst patients were taking aspirin, 1 on clexane, 3 on rivaroxaban and 1 whilst on warfarin. 7 clots were during lenolidomide maintenance: previously we had used clexane during induction and then switched to aspirin for maintenance. 1 patient had a clot after requesting switch from clexane to aspirin prophylaxis during CTDa.

We present data from our ongoing audit of VTE in IMiD-containing myeloma regimes (Thalidomide, Lenalidomide or Pomalidomide). When patients are consented for IMiD-based treatment, their suitability for Rivaroxaban prophylaxis is assessed and documented. This assessment looks at renal function (we use a GFR threshold of 30ml/min for all NOACs) and those patients with a history of GI bleeding or gastrointestinal ulceration are not offered Rivaroxaban.

75 patients have so far received Rivaroxaban alongside their treatment: 65 as prophylaxis; 10 at therapeutic dose (either for prior VTE or AF). 44 patients received Lenalidomide based treatments, 18 had thalidomide, 12 patients received pomalidomide, and 1 had non-IMiD containing VMP. 3 patients with previous VTE received prophylactic Rivaroxaban of 10mg and have not had a further VTE to date.

Rivaroxaban has been well tolerated in our cohort: no patient has discontinued due to intolerance. We have not had any problems with gastrointestinal bleeding. 1 patient was found to have a chronic subdural following a head injury. There have not been any other patients discontinue due to bleeding symptoms.

3 patients have had thrombosis on Rivaroxaban prophylaxis: 1 patient on Lenalidomide Dexamethasone (LenDex) had severe c.difficile infection and had a PE; 1 patient on LenDex died of septic shock and had an incidental finding of small PE on CT; 1 patient on CCLD (Carfilzomib Cyclophosphamide Lenalidomide Dexamethasone) had a PE, but no additional provoking factor or factor affecting Rivaroxaban absorption has been identified.

At East Kent Hospitals, we continue to offer patients Rivaroxaban or clexane prophylaxis based on an individualised assessment. Given the small number of breakthrough clots we have seen, we consider switching to clexane if patients are hospitalised or where there may be concerns about drug absorption (ie diarrhoea).