



Pre-operative Anticoagulation Management for Hip Fracture Surgery

Position Statement Oct 2019

Delaying surgery, beyond 36 hours (24-48 hours), for older people with hip fractures has a significant impact on morbidity and mortality (this cohort is a metric for all frailty fractures)^{1,2}. At the same time the cessation of either anticoagulation or anti-platelet medication, and often the failure to re-start these medications promptly postoperatively, increases the risk of subsequent ischaemic events; cardiac, cerebral³ and peripheral. The population at greatest risk are those on dual antiplatelet therapy (commonly aspirin and clopidogrel) within 6 months of onset^{4,5}. As such the need to limit the length of cessation of these medications needs to be rationalised within the context of current evidence.

Studies show over a third of frailty fracture patients may take risk reducing anticoagulation or antiplatelet medication. Continuation of these medications would reduce the risk of an ischaemic event, however of concern is an increase in surgical bleeding or risk of vertebral canal haematoma following spinal anaesthetic. A judicious yet pragmatic approach to balance these risks is needed.

The 2011 AAGBI guidelines for Hip Fracture management advise no delay to surgery for patients on aspirin, clopidogrel or warfarin⁶. The guidelines specify reversal of warfarin with vitamin K and an International Normalised Ratio (INR) of below 2 for surgery and 1.5 for spinal anaesthetic. The NAP3 report established the incidence of vertebral canal haematoma as 'very small' 1:118 000^{7,8}. In the emergency management of older patients with hip fractures it is likely to be even lower than this⁷. The 2013 joint guidelines for "*Regional anaesthesia and patients with abnormalities of coagulation*" acknowledges that the risk is likely to be small but cannot quantify exactly what that risk is⁸. Risk increases with the number needle passes of spinal anaesthesia so in difficult spines (for example patients with a lumbar scoliosis) the balance of risks changes. In reality if the clinician is concerned then a carefully considered general anaesthetic with a fascia iliaca nerve block may be a more acceptable anaesthetic choice avoiding any risk of a vertebral canal incident¹⁰.

Direct oral anticoagulants (DOACs)

Around one in ten patients are currently taking *direct oral anticoagulants*. The indication for use are wide ranging including; atrial fibrillation and venous thromboembolism. There are two groups Xa inhibitors (rivaroxaban and apixaban as examples) and Thrombin inhibitors (such as dabigatran). Each has a different mechanism of action and therefore a different peri-operative plan.

Dabigatran is at present being prescribed less often across Wales. Consequently Praxabind the reversal for Dabigatran is in increasingly surplus supply. As such WFFN recommend the routine use of Praxabind reversal, to reduce delay to theatre.

Patients on DOACs with reduced renal function need a longer period of time to allow for drug excretion. In these cases the balance of risks for delaying surgery or proceeding with the risk of increased surgical bleed needs to be discussed in a planned multidisciplinary format. Reasons for delay in time to theatre beyond the >36 hours target need to be carefully documented.

Patients who require a spinal anaesthetic with an INR more than 1.5, dual anti-platelet therapy, taking Xa inhibitors with a CrCl 30ml/min or the absence of Praxibind for Dabigatran, should be discussed with an Orthogeriatrician or Haematologist.

Blood transfusions

Hip Fracture patients taking antiplatelet or anticoagulant medications have an increased association of post-operative blood transfusions. However there is no evidence that there is an increased association in mortality¹⁰⁻¹³. A liberal transfusion approach has been shown to benefit the frail elderly population with a fracture. As such a transfusion threshold haemoglobin 90g/L and

100g/L in patients with a cardiac ischaemia background should be maintained (please see WFFN Post-operative Haemoglobin Guidelines 2018). The average peri-operative (in theatre and initial post-operative period) haemoglobin fall is 2.5g/L^{6,14,15}. Post-operative haemoglobin should be closely monitored as it can significantly impact post-operative mobilisation and is an independent risk factor for morbidity and length of hospital stay,

The “Pre-operative Anticoagulation Management for Hip Fracture Surgery” guideline from the Welsh Frailty Fracture Network, together with the above recommendations, are in line with the, soon to be published, Association of Anaesthetists updated Hip Fracture Management Guideline.

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