Complications Associated with Prilocaine Use for Intravenous Regional Anaesthesia during Bier's Block Manipulation of Wrist Fractures

Major complication	
Nerve injury	Rare. Zero patients out of 4448 who underwent intravenous regional anaesthesia (IVRA) in a large, prospective study of regional anaesthetic blocks in France experienced nerve injury.[1] The risk factors appear to be younger age, longer tourniquet times and higher tourniquet pressures (>400mmHg).[2]
Anaphylaxis	Rare. No documented cases in a 15 year retrospective review of 7410 patients undergoing Bier's block using prilocaine.[3]
Compartment syndrome	Distal radius fracture is an independent risk factor for compartment syndrome. Therefore, it is difficult to determine the contribution of Bier's block to its development. A systematic review identified 10 cases with contributing factors including, medication errors, the use of multiple tourniquets, excessive tourniquet pressure and significant fracture site haematoma.[4]
Methaemaglobinaemia	Associated with prilocine use. No great consensus on safe maximum dose in adults or specifically for IVRA. A maximum dose on 6mg/kg is generally considered to be safe.[5] The BNF states a maximum dose of 400mg[6] although symptomatic methaemaglobinaemia has been described at lower doses.[7] Patients with renal impairment and those taking oxidizing drugs are at increased risk. Doses of <5mg/kg have been suggested for healthy adults with lower doses for the high risk groups described above.[7]
Seizures	No reported cases with prilocaine use in dose of <4mg/kg.[3,4]
Arrhythmias	No reported cases with prilocaine use in dose of <4mg/kg.[3,4,8]
Cardiac arrest	No reported cases with prilocine use.[4]
Death	No reported cases with prilocine use.[4,8]
Minor complications	
Tourniquet pain	Patients may report discomfort at the site of the inflated tourniquet after 30-40mins. The anaesthetist can manage this by inflating the distal cuff and deflating the proximal cuff if necessary[9]
Rash	Cases of skin discolouration and petechial rashes have been reported but were not associated with systemic upset.[10,11] The outcome is not described in all cases but one case reported resolution after 1 week.[11]
Thrombophlebitis	No documented cases found which were associated with prilociane use.

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