

Emergency Department BIERS BLOCK CHECKLIST

AGH	
WRH	

<Name>	<Age>	<DoB>	<Hosp number>	<NHS Number>	<ED episode number>
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BEFORE THE PROCEDURE Indication: **Distal Forearm Fractures** **Other**

	Yes	No		Yes	No
Patient Identity checked as correct?			Bier's machine checked ?		
Appropriate Consent completed?			Cuff(s) checked for leaks?		
Confirm SITE / SIDE of clinical abnormality by two clinicians – sign below			Are there any concerns about this procedure for the patient or its timing ?		
Small bore IV cannula (22G) for each limb ?			Drug dosage calculation and preparation		
Radiographer aware of procedure			Cuff bandage; plaster equipment ready		
Patient has been given advice leaflet			Baseline Observations		

TIME OUT

	Yes	No		Yes	No
Patient adequately analgesed ?			Patient is adequately Monitored (Sats, ECG, BP)		
Patient position is optimal			Team members identified & roles assigned		
Plan for management LA toxicity discussed			Cuff Technique agreed before commencing		
			All team members able to read pressure dial		

STOP BEFORE YOU BLOCK Have you got the Correct Side ?

Clinician 1	<input type="checkbox"/> Right <input type="checkbox"/> Left	Clinician 2	<input type="checkbox"/> Right <input type="checkbox"/> Left
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DURING PROCEDURE

●WEIGHT Actual Estimate

●Local Anaesthetic:
 Prilocaine 0.5%
 Propocaine 1%
 Lidocaine 1%
 ●Technique: Cuff Rotation
 Double cuff no rotation
 Single cuff no rotation
 ●UltraSound ? Yes No
 ●Adverse Events No Yes (record in notes)

Kg	Prilocaine 3mg/Kg	
	0.5%	1.0%
80	48ml	24ml
70	42ml	21ml
60	36ml	18ml
50	30ml	15ml
40	24ml	12ml

Systolic BP (mmHg)	
Cuff Inflation time (24hrs) <small>(min 20mins, max 45mins in total)</small>	
Cuff Pressure (mmHg) <small>(100mmHg above systolic or max 300mmHg)</small>	
Injection Time (24hrs)	
Cuff Rotation time <small>(24hrs)(if applicable)</small>	
Cuff Deflation time <small>(24hrs)</small>	

SIGN OUT

	Yes	No		Yes	No
Repeat Baseline Observations			Cannula removed; Manip limb circulation check		
Ensure adequate analgesia now and TTO			Written advice (PoP) and follow-up arranged		

PROCEDURE
Date
Time (24hr)

STAFF (print & sign)
Operator
Assistant(s)

Local Anaesthetic Systemic Toxicity

Almost always occurs within minutes of injection of the local anesthetic and is rare. Neurologic symptoms typically precede cardiovascular symptoms in lidocaine toxicity. Cardiovascular symptoms typically present first in bupivacaine toxicity.

CNS Symptoms

Minor Signs/Symptoms

- Tongue and perioral numbness
- Parasthesias
- Restlessness
- Tinnitus
- Muscle fasciculations + tremors

Major Signs/Symptoms

- Tonic-clonic seizures
- Global CNS depression
- Decreased level of consciousness
- Apnea

Cardiovascular Symptoms

Early Signs

- Hypertension and tachycardia

Late Signs:

- Peripheral vasodilation + profound hypotension
- Sinus bradycardia, AV blocks
- Conduction defects (Prolonged PR, Prolonged QRS)
- Ventricular dysrhythmias
- Cardiac arrest

General Management – toxicity is worsened by the presence of Hypercapnia, Hypoxia, Acidosis

- Any symptom of LA toxicity eg. perioral tingling – stop injection, IV access, cardiac monitor, consider resus room.
- Aggressive supportive care as required and may include-FiO₂ 100%, hyperventilate, adrenaline, bicarbonate, benzodiazepines.
- High Quality CPR may be necessary particularly in the case of the longer lasting Local Anaesthetics such as bupivacaine.
- **Intralipid** (Resus fridge / ICU) Bolus: 1 – 1.5 ml/kg over 1 min. Can repeat bolus every 3 minutes up to a total dose of 3 ml/kg

LA Toxicity Management Specific to Bier's Block

- Note cuff pressure and inflate the cuff to 100mmHg above the pre-procedure recorded BP.
- Measure the patient's current systolic BP and ensure cuff pressure is maintained 50mmHg above this.
- Commence Oxygen and IV Fluids.
- Prepare to treat serious features mentioned above.
- Intralipid is helpful in local anaesthetic toxicity.

Methaemoglobinaemia

- A problem specific to prilocaine, usually in doses >16mg/kg but can occur with other drugs (lidocaine, GTN, phenytoin, metoclopramide, poppers, cocaine)
- Symptoms related to MetHb level
 - 3-20% Discoloured skin (pale, grey, blue) and cyanosis
 - 25-50% headache, SOB, dizzy, confusion, chest pain
 - >50% cardiac arrhythmias, delirium, seizures, coma, death
- Diagnosis MetHb level eg. arterial blood gas sample
- Treatment IV methylene blue 1-2mg/kg over 5mins if MetHb >20% and symptomatic (avoid in G6PD deficiency)