

# Low CSF Pressure Headache Management

## Full Clinical Guideline

Reference no.: CG-NEURO/2020/3528

### 1. Introduction

Most Low Cerebrospinal fluid (CSF) pressure headaches occur post-dural puncture and as Spontaneous Intracranial Hypotension. Other causes include a CSF fistula and post-surgical leak.

**Post-Dural Puncture Headache (PDPH)** is easily identified and usually begins in the first 48 hours post-lumbar puncture (LP) although rarely it can occur up to 2 weeks later. Other diagnoses should be considered, if appropriate.

**Spontaneous Intracranial Hypotension (SIH)** is a likely under-diagnosed phenomenon which should be considered in patients with orthostatic headache and/or typical MRI changes (pachymeningeal enhancement, sagging of the brain, engorgement of the dural venous sinuses and pituitary gland, and subdural fluid collections). Other symptoms include neck stiffness, tinnitus, hyperacusis, photophobia or nausea.

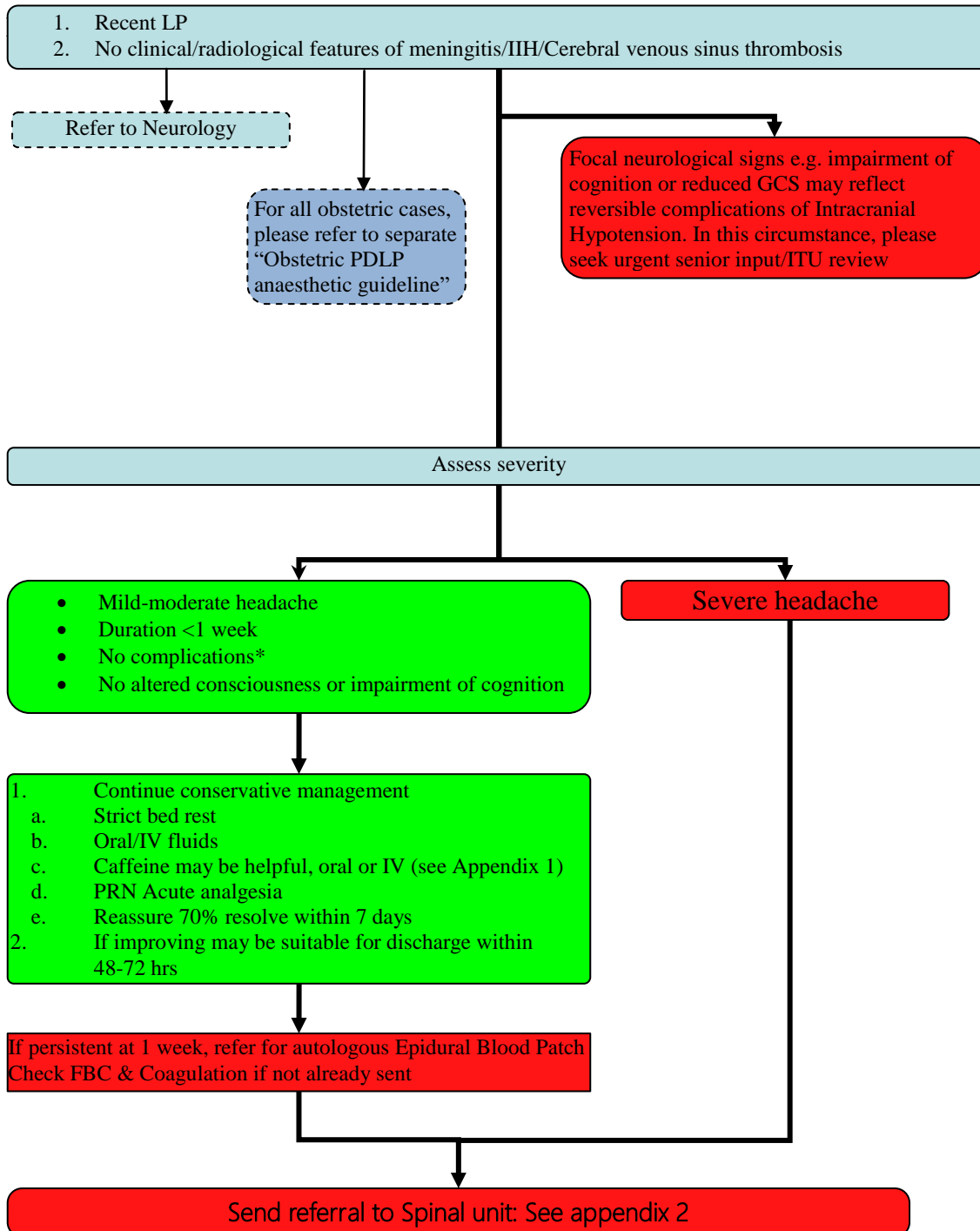
SIH can also be confirmed by demonstrating a low CSF opening pressure <6cm, but it is much preferable to avoid undertaking an LP in this cohort of patients, if possible.

PDPH and SIH are usually self-limiting and can be managed conservatively with bed rest, fluids and analgesia but for more severe and persistent cases, intravenous caffeine (see Appendix 1) is often used although the evidence base is limited<sup>1</sup> and theophyllines may also be efficacious<sup>2</sup>. In addition, autologous **Epidural Blood Patch (EBP)** has been shown to be a relatively safe and effective treatment for both PDPH and SIH.<sup>3</sup>

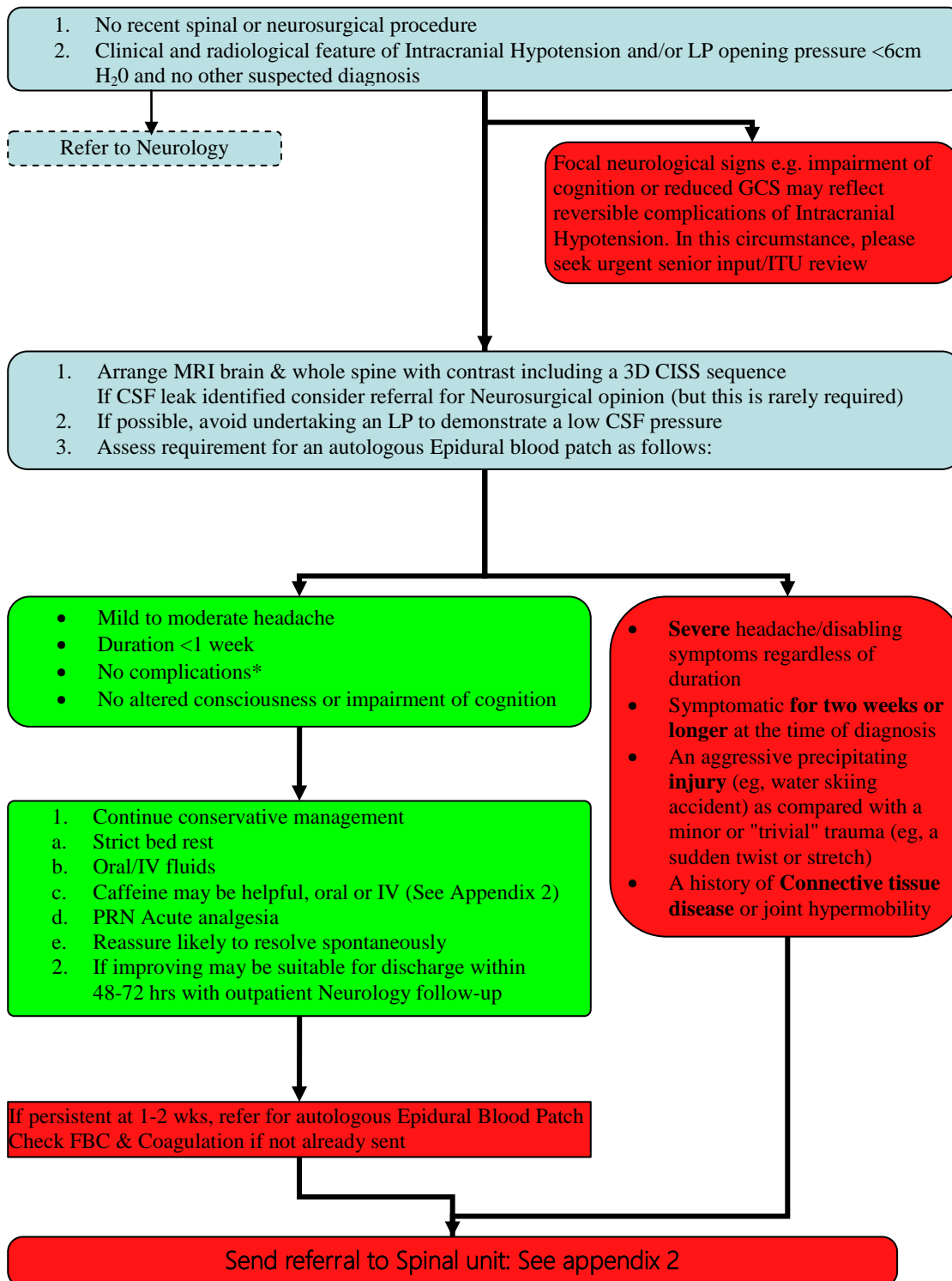
### 2. Aim and Purpose

- Outline management of low CSF pressure headaches from SIH and post dural puncture
- Create a pathway for Epidural Blood Patch for patients under General Medicine or Neurology that uses available resources more effectively

## Post-Dural-Puncture Headache



## Spontaneous Intracranial Hypotension



## Appendix 1

### Protocol for use of IV Caffeine in PDPH and SIH

Prior approval of specialist (Neurologist) to be sought before prescribing IV Caffeine in PDPH and SIH

Pre-infusion baseline 12 Lead ECG

By intravenous infusion: 500 mg Caffeine in 1 L 0.9% NaCl given over 2 hours

Cardiac monitoring is necessary as caffeine can induce arrhythmias.

BM Stix readings should be performed one hour and two hours after start of the infusion.

### Adverse effects

Tachycardia, extrasystoles, possibly other cardiac arrhythmias.

Restlessness

Agitation

Nausea, vomiting, gastric irritation

Diuresis

Hypoglycaemia and hyperglycaemia

### Contraindications

Cardiac arrhythmias

Pregnancy and lactation

Caution in peptic ulceration

Caution in psychiatric disease

### 1 References (including any links to NICE Guidance etc.)

- 2 Goadsby PJ, Boes C. New daily persistent headache. *J.Neurol.Neurosurg.Psychiatry* 2002;72 Suppl 2:ii6-ii9.
- 3 Marcellis J, Silberstein SD. Spontaneous low cerebrospinal fluid pressure headache. *Headache* 1990;30:192-6.
- 4 Levi V, Di Laurenzio NE, Franzini A, et al. Lumbar epidural blood patch: effectiveness on orthostatic headache and MRI predictive factors in 101 consecutive patients affected by spontaneous intracranial hypotension. *J Neurosurg.* 2019 Feb 8:1-9.

Appendix 2

# Spontaneous Intracranial Hypotension Epidural Blood Patch (in-patient) Referral form

Date of referral:

Consultant:

Ward/Dept:

Site:

Referrer's name/grade:

Contact no:

Please affix patient label here

Name \_\_\_\_\_

DOB \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_

Hospital ID \_\_\_\_\_

NHS No \_\_\_\_\_

Case summary:	
PMHx:	
Any focal neurological signs?	
Anticoagulants:	
Antiplatelet agents:	
Blood results/Date:	
Hb:	Platelets:
PT:	APTT:
Imaging reports/date:	

Is the patient suitable for outpatient management?	

Signature \_\_\_\_\_

Send referral to: **Spinal Unit c/o Spinal Interventional Diagnostic and Therapeutic Service - to be listed on elective spinal interventions list**

If referral accepted, chase date of booking and arrange bed on Elective Procedures Unit (EPU) for outpatient procedures [please send completed electronic EPU referral form too]

### 3. Documentation Controls

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Approved By:	<i>Divisional Governance meeting 20/01/2020 Medicine Division, Dr Chris Whale in attendance</i>
Review Date:	Suggested review date February 2023
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