Chronic pain in patients with sickle cell disease: Clinical guideline

Introduction

In sickle cell disease (SCD), pain is considered chronic if it occurs on most days for >3 – 6 months. It has been estimated that 30 – 40% of adults with sickle cell disease suffer with chronic pain. It is a complex and frequently challenging problem and requires careful assessment of the patient for sickle and non-sickle related potential causes. Complications arising from analgesics themselves in the context of chronic pain must also be considered and range from renal/gastric complications of non-steroidal anti-inflammatories (NSAIDs) to opioid-induced hyperalgesia and chronic opioid withdrawal in the setting of recurrent acute opiate treatment. Neuropathic pain is also common in sickle cell disease and requires a specific treatment approach.

Chronic pain is often associated with depression, anxiety, insomnia and dependence on pain medications. Hyperalgesia and allodynia may also be influenced by psychological factors, and full assessment of chronic pain must always include social, behavioural and psychological elements as part of a multidisciplinary team approach. Whereas the aim of acute pain treatment is to heal the acute process, the aim of chronic pain management is to restore function and improve the quality of life wherever possible.

The comments below relate to patients in whom SCD-specific management is optimised (e.g. maximum tolerated dose hydroxycarbamide). There is relatively little evidence to support specific management interventions.

Management

- Assess for causes of pain which may be managed independently of SCD (e.g. arthritic pain, gastritis/peptic ulceration)

- Review NICE guidelines for specific chronic pain areas: https://www.nice.org.uk/guidance/ng193/resources/visual-summary-pdf-9073473517

- Determine if there is a focal SCD-related chronic pain such as avascular necrosis, vertebral compression fractures, or leg ulcers, which may benefit from specific directed therapy. Investigations should be focused on the source of pain and may include MRI (for possible avascular necrosis, and vertebral endplate infarction), vitamin D levels and endocrine assessment.

- Patient education regarding the use of simple anti-inflammatory agents including paracetamol is important, and an ‘analgesic ladder’ approach which includes regular simple non-opioid analgesics in the first instance before progressing to stronger opioid

- Non-opioid analgesics approaches include NSAIDs for those whose renal function permits this (patient education regarding possible complications including gastritis and renal dysfunction is important, and proton pump inhibitor

protection should be considered for patients taking regular nonsteroidal anti-inflammatories). Agents for neuropathic pain such as gabapentin may have utility though there is a limited evidence base to support their use. There is some evidence to support the use of serotonin/noradrenaline reuptake inhibitors or amitriptyline as an adjunct to pain control as part of a comprehensive disease management plan. NICE guidelines on the management of chronic pain can be found: https://www.nice.org.uk/guidance/ng193

- Use a combination of the patient's response to treatment, including pain relief, side effects and functional outcomes to guide long-term use of opioids. Where possible the initiation of long term opioid therapy should be avoided unless pain is refractory to multiple other treatment modalities. Prescriptions for long-term opioids should be issued either by primary or secondary care, and should be limited to short term (e.g. 1 month) prescriptions. Good communication is essential to ensure over/under-prescription is avoided. If the opioid is not of benefit to the patient's function, then the opioid should be stopped, and the team should focus on improving patient functional outcomes in other ways.

- Long and short-acting opioids are no longer recommended by NICE to manage chronic pain that is not relieved by non-opioids. Advice is available here: https://www.ouh.nhs.uk/services/referrals/pain/opioids-chronic-pain.aspx. At doses of more than 120 mg oral morphine equivalent a day there is increased risk of harm, with no increased benefit and the likelihood that opioid-based medication is not working.

- Patients should be encouraged to seek and use non-medical approaches as an adjunct to pain relief, if they find it helpful. These are likely to include cognitive and behavioural pain management strategies.

- All patients with SCD should be assessed for chronic pain annually, including its severity on a numerical scale, functional assessment, alleviating and relieving factors and effects on quality of life. Wherever possible, patients should be managed in conjunction with their local pain service.

References:

Standards for the Clinical Care of Adults with Sickle Cell Disease in the UK © Sickle Cell Society (2018)

AAPT diagnostic criteria for chronic sickle cell disease pain. Dampier et al, *J Pain* 2017

NHLBI (2014) Evidence based management of sickle cell disease. Expert panel report https://www.nhlbi.nih.gov/sites/www.nhlbi.nih.gov/files/sickle-cell-disease-report.pdf

NICE (2021) Chronic pain (primary and secondary) in over 16s: assessment of all chronic pain and management of chronic primary pain.
https://www.nice.org.uk/guidance/ng193

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Review

Name	Revision	Date	Version	Review date
Dr Wale Atoyebi	Pre-peer review	Jan 2013	1.0	Jan 2015
Dr Deborah Hay	Routine review	Aug 2015	1.2	Jan 2017
Dr Noemi Roy	Routine review, update references	Dec 2017	1.3	Dec 2019
Dr Deborah Hay Felicity Wintle, OUH pain service Sandy Hayes	Review and NICE guidance update	Dec 2021	1.4	Dec 2023
Felicity Wintle, OUH Pain service Dr Noemi Roy	Full Review	April 2024	2.0	April 2026