Emergency Department Vaso-occlusive Crisis Management: Adults and Children

Developed by the CCNC Sickle Cell Task Force with representation and formal endorsement from (SC)², and from NC Emergency Nurse’s Association. This algorithm was adapted from the recommendations for the treatment of vaso-occlusive guideline published by the National Institutes of Health, National Institute of Heart, Lung and Blood, Evidence-Based Management of Sickle Cell Disease: Expert Panel Report, 2014.¹

Is patient experiencing a VOC?

- Yes

  Does the patient have an individualized management plan?

    - Yes
      - Follow individualized plan
    
    - No
      - Is patient underutilizing outpatient care?
        
        - Yes
          - Follow algorithm for VOC and refer for additional outpatient assessment (e.g., case management plan, pain clinic, outpatient provider, other resources). Develop individualized plan when possible with assistance from other resources.
        
        - No
          - Evaluate pain relief and sedation every 15-30 minutes. After administration of 3 doses of opioids, reassess pain for improvement.

          - Pain resolved and patient states they can manage pain at home?
            
            - Yes
              - Discharge home according to protocol (see Discharge Box next page). Consider referral to case management, pain specialist, or social worker as appropriate.
            
            - No
              - Admit to Hospital

          - Is the pain improving?
            
            - Yes
              - Continue analgesic management either in ED or consider transfer to observation status and/or unit. (Goal: avoid hospital admission)

            - No
              - No

- No

  Treat specific complaint

¹ Assign ESI Triage Level II and facilitate rapid placement
  • Provide pain management according to protocol (See Pain Management Box next page)
  • Evaluate pain relief and sedation every 15-30 minutes. After administration of 3 doses of opioids, reassess pain for improvement.
  • Is patient the experiencing a VOC?
  • Is the patient underutilizing outpatient care?
    • > 5 ED visits in last 12 months
    • No outpatient SCD provider (PCP/heme)
    • Red flags in state prescription monitoring program
    • Multiple missed clinic visits
  • Is the pain improving?
  • Is the patient underutilizing outpatient care?
  • Is the patient underutilizing outpatient care?
PAIN MANAGEMENT PROTOCOL

- Use individual/personalized analgesic dosing plans if and when available (Electronic medical records).
- Treat pain aggressively & promptly. Rule out other sources of pain than VOC while treating VOC.
- Attempt to contact patients' SCD physician for analgesic suggestions, however, DO NOT delay administration of analgesics.
- Administer first dose as soon as possible given triage and healthcare resources, ideally within 30 min of triage or 60 min of registration.
- Administer intravenous opioids.
- Use the subcutaneous route if obtaining IV access will significantly delay administration of first dose, and, when intravenous access is not possible. Avoid intra-muscular route due to tissue damage and erratic absorption. Use weight based dosing when individual plan is not available. (e.g. morphine Sulfate, 0.1 mg/kg, or hydromorphone 0.02 mg/kg, Ex: 75 kg = MS 7.5 mg or hydromorphone 1.5 mg) http://sickleemergency.duke.edu/sites/default/files/final%20weight%20based.pdf
- Allow patients to continue long-acting opioids in the ED, if prescribed as an outpatient.
- Re-assess for pain, pulse oximetry, and sedation, using a validated sedation scale such as RAAS, every 15-30 minutes.
- Re-administer analgesic doses every 15-30 minutes until pain relief is obtained, if the sedation score and oxygenation status are acceptable. Rapid aggressive pain control will decrease the need for admission.
- Repeat doses may be escalated by 25% of the initial dose if there is no or minimal improvement in pain score.
  - If patient has received 3 doses, re-evaluate
    - For improving but unresolved pain, continue to aggressively treat pain but consider an increase in dose, change in drug and/or re-dosing intervals. Continue to treat in ED or transfer to observation status and/or unit.
    - If pain is resolved, discharge home.
    - For minimal or no change in pain, admit to hospital.
  - If facility has the ability and established protocols, consider beginning PCA in the ED after administration of a minimum of 2-3 doses (after initial parenteral doses). Do not delay pain treatment to start PCA.

ADJUVANT AGENTS

- Administer oral or parenteral NSAIDS as an adjuvant analgesic in the absence of contraindications.
- Intravenous or oral hydration at maintenance rate, caution with CHF or renal failure.
- Supplemental oxygen for SPO2 <95% on room air.
- Treat itching with oral antihistamines (in some cases intravenous administration may be required), q 4-6 hours.
- Use non-pharmacologic approaches such as heat and distraction (e.g., music), when available.

DISCHARGE HOME, ANALGESIC PRESCRIPTIONS, AND REFERRALS

- Consult case management or social work early to identify unmet needs and work with patients with high numbers of ED visits or hospitalizations.
- Encourage patient to contact sickle cell provider to obtain opioid prescriptions.
- If SCD provider not available, provide short course of short acting opioids (e.g., oxycodone, hydrocodone).
- Consult state prescription monitoring database to guide opioid prescription determination: follow up within several days.
- Refer all patients to the (SC)² for linkage to SCD doctor and for follow-up. Fax referral forms obtained from www.SC2.org to 843-876-8519.

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