Chronic Transfusion Therapy[1,6]

INDICATION

Children with TCD reading >200 cm/sec

Adults and children with previous clinically overt stroke

RECOMMENDATIONS

In patients not chronically transfused and at risk for hyperviscosity due to increased HbS-containing erythrocytes, avoid transfusing to Hb >10 g/dL

In chronically transfused children with SCA, the goal should be to maintain HbS level <30% immediately prior to the next transfusion

In patients without RBC antibodies, ABO/full Rh/Kell-matched blood should be provided, at a minimum, to reduce alloimmunization risk

RISKS

Iron overload, alloimmunization, delayed hemolytic transfusion reactions, hyperviscosity

Curative BMT

Indications & Guidance for HLA-Matched Related HSCT[1,7]

Suggested indications

Consider HLA-matched related HSCT in:

1. Patients who have experienced an overt stroke or have an abnormal TCD
2. Patients with frequent pain episodes requiring medical attention
3. Patients with recurrent episodes of ACS

More information, including references, can be found by scanning the QR code on the back panel.

Transformative Gene Therapies

Lovotibeglogene autotemcel (Lyfgenia) and exagamglogene autotemcel (Casgevy) are 2 recently FDA-approved cell-based gene therapies for patients aged ≥12 years with SCD and a history of VOEs.

More information, including references, can be found by scanning the QR code on the back panel.

A Broad Pain Management Approach:

ASH 2020 Recommendations[5]

ACUTE SCD PAIN IN THE ACUTE CARE SETTING

1.	Rapid assessment (≤1 hour) and administration of analgesia, with reassessments every 30 to 60 minutes
	Tailored opioid dosing
2.	Short course (<3 days) of NSAIDs in addition to opioids
	Recommend against use of corticosteroids for acute pain
	Regional anesthesia treatment for localized refractory pain
	Adjunct subanesthetic ketamine for refractory pain (hospital setting)
3.	Adjunct massage, yoga, TENS, VR, and guided AV relaxation
	No recommendation for or against acupuncture or biofeedback
4.	SCD-specific hospital-based acute care facilities over ED-based care
5.	No recommendation for/against basal opioid dosing in conjunction with on-demand dosing or scheduled intermittent dosing

NONOPIOID THERAPIES FOR CHRONIC SCD PAIN

(in context of a comprehensive disease and pain management plan)

6.	Duloxetine (and other SNRIs) for avascular necrosis of bone
	NSAIDs for avascular necrosis of bone
7.	SNRIs for pain with no identifiable cause beyond SCD
	TCAs for pain with no identifiable cause beyond SCD
	Gabapentinoids for pain with no identifiable cause beyond SCD
8.	Cognitive and behavioral pain management strategies
	Provider-delivered integrative approaches (eg, massage, acupuncture)
	No recommendation for/against physical activities, exercise, or combined meditation/movement programs
9.	Recommend against initiation of chronic opioid therapy (COT) for recently developed chronic pain unless pain is refractory to multiple other treatment modalities
	SDM for continuation of COT in patients who are functioning well and have perceived benefit
	Recommend against continuation of COT in patients who are functioning poorly or are high risk for aberrant opioid use or toxicity

ASH recommends against chronic transfusion therapy as first-line treatment to prevent or reduce acute pain episodes AND offers no recommendation for/against chronic transfusion for chronic pain management

SICKLE CELL DISEASE

A CLINICIAN'S POCKET GUIDE

Preventive Care & Routine Health Maintenance Checklist[1]

- ☑ **Prophylactic penicillin BID until age 5 years:** age <3 years, 125 mg; age ≥3 years, 250 mg
- ☑ **Pneumococcal and meningococcal immunizations, as well as other recommended vaccines** (per AAP, ACP, etc)
- ☑ **Routine screening for signs of organ damage**
  - Screen for nephropathy annually, beginning at least by age 10 years, with urine albumin-to-creatinine ratio
  - Blood pressure at every visit
  - Refer to ophthalmologist for dilated eye exam, beginning at age 10 years; rescreen every 1 to 2 years
  - TCD annually, beginning at age 2 years, until age 16 years; if ≥170 cm/sec refer to specialty care
  - Cardiopulmonary H&P at each visit
- ☑ **Reproductive and contraception counseling**
- ☑ **Structured mental health and support programs**
- ☑ **Patient and family education**
  - Lifestyle advice (eg, hydration, trigger avoidance)
  - Signs/Symptoms warranting immediate medical attention:
    - ~ Fever >101° F, acute chest pain, severe pain, trouble breathing, weakness or confusion, jaundice, and severe swelling of hands or feet

Pharmacotherapies

HYDROXYUREA (HU)[1,2]

Pretreatment recommendations

- CBC w/ diff, reticulocytes, RBC MCV, CMP, HbF if possible (via electrophoresis or HPLC), pregnancy testing, and contraception

Initial dosage

- Adults (500-mg capsules): 15 mg/kg/day (round up to the nearest 500 mg) or 5 to 10 mg/kg/day if patient has CKD
- Infants and children: 20 mg/kg/day

Monitoring

- CBC w/ diff Q4W when adjusting dose and every 2 to 3 months once stable dose established
- Target ANC ≥2000/µL; younger patients may tolerate ANC 1250/µL
- Maintain platelets ≥80,000/µL

Dose escalation, if warranted

- Increase by 5 mg/kg/day Q8W up to a max of 35 mg/kg/day until mild myelosuppression achieved (ANC 2000-4000/µL)

Warnings/Precautions

- Severe myelosuppression, embryofetal toxicity, vasculitic toxicities, macrocytosis, radiation recall
- Avoid live vaccines and antiviral drugs

Patient education

- Do not open capsules
- Wear disposable gloves, wash hands before and after handling
- Effectiveness depends on adherence to daily dosage
- Do NOT double up if dosage is missed
- Continue HU during hospitalizations or illness
- Clinical response may take 3 to 6 months
- 6-month trial on maximum tolerated dose is required prior to considering discontinuation

CRIZANLIZUMAB[1,3]

Pretreatment laboratory precautions

- Interference with automated platelet counts (platelet clumping); run test as soon as possible or use citrate tubes

CRIZANLIZUMAB[1,3] (CONTINUED)

Dosage

- 5 mg/kg of actual body weight by IV infusion administered over 30 minutes

Schedule

- **Week 0:** first infusion
- **Week 2**: second infusion
- **Every 4 weeks thereafter:** maintenance infusions

Monitoring

- Monitor patients for signs and symptoms of infusion-related reactions (including fever, chills, nausea, vomiting, fatigue, dizziness, pruritus, urticaria, sweating, shortness of breath or wheezing), defined as occurring within 24 hours of infusion

Missed dose

- If ≤2 weeks, administer and resume original schedule
- If >2 weeks late: administer and continue dosing every 4 weeks thereafter

Warnings/Precautions

- Nausea, arthralgia, back pain, and pyrexia occur in >10% of patients
- Infusion-related reactions

Patient education

- If infusion-related reaction occurs, seek immediate medical attention

L-GLUTAMINE[1,4]

Dosage

- 5 to 15 g BID according to body weight:
  - <30 kg, 5 g BID; 2 packets/day
  - 30 to 65 kg, 10 g BID; 4 packets/day
  - >65 kg, 15 g BID; 6 packets/day
- Each powder dose should be mixed in 8 oz cold or room temperature beverage or 4 to 6 oz food, before ingestion

Warnings/Precautions

- Constipation, nausea, headache, abdominal pain, cough, pain in extremity, back pain, and chest pain occur in >10% of patients

Patient education

- Missed dose should be taken as soon as remembered
- Do NOT double up dosage
- Complete dissolution is not required prior to administration

PATIENT SUPPORT ORGANIZATIONS

Sickle Cell Disease Association of America, Inc

https://www.sicklecelldisease.org/

National Alliance of Sickle Cell Centers

https://sicklecellcenters.org/

American Society of Hematology

https://www.hematology.org/education/patients/anemia/sickle-cell-disease

HRSA Maternal & Child Health

https://mchb.hrsa.gov/programs-impact/programs/sickle-cell

Clinical Trial Finder

https://www.sicklecelldisease.org/clinical-trial-finder/

For References & Links to Additional Resources, Visit Our SCD Clinical Resource Center at ***ExchangeCME.com***