1.0 Policy statement

Patients admitted on hydroxyurea shall not be given hydroxyurea prescription on discharge. **Haematology is to prescribe in order to monitor blood work.**

2.0 Definitions

- **Hydroxyurea (HU)** is a chemotherapy medicine that has been used to treat many disorders, including sickle cell disease (SCD). Research has shown that patients with sickle cell disease who take hydroxyurea are admitted to hospital because of painful events only half as often as patients who do not take hydroxyurea, have fewer acute chest crises and have less need for blood transfusions if they are admitted to hospital. Please see [www.aboutkidshealth.ca](http://www.aboutkidshealth.ca).

- **Maximum Therapeutic Dose (MTD)** is maximum dose or clinical efficacy achieved.

- **Transcranial Doppler (TCD)** is a non-invasive ultrasound used to screen for strokes measuring the rate of blood flow through the large vessels on both sides of the brain.

- **Vaso-Occlusive Crises (VOC)** are blockages of the blood vessels anywhere in the body by deformed red blood cells. This causes a lack of oxygen in the affected area of the body. Symptoms depend on where the blood vessels are blocked.
**3.0 Guideline**

### Indications for Hydroxyurea
- In relapse or 6 months of age, children, and adolescents with SCA, offer treatment with hydroxyurea regardless of clinical severity to reduce SCD-related complications. Refer to NF guidance.
- ≥2 hospitalizations for Vaso-Occlusive Crises (VOC) episodes in a 10-month calendar period
- ≥3 acute chest crises requiring transfusion
- ≥1 stroke episodes/organ involvement due to VOC pain managed at home
- Abnormal Transcranial Doppler (TCD) in patient requiring translation therapy
- Chronic hypoxemia
- Lower hemoglobin > 7.5 g/dL
- High conditional TCD velocities
- Presence of silent infarcts on screening
- Poor growth and development

### Prior to initiating Hydroxyurea
- Ensure the following is completed:
  - Bloodwork
  - Patient education and ensure there is an ongoing discussion
  - Develop a treatment plan
  - Write prescription
  - Initial dose at home

### Ongoing Monitoring
- Monitoring
  - CBC, CRP, Hb F
  - 6 months CBC, CRP, Hb F
  - 6 months Hb analysis
  - ALT, AST, BUN

### Threshold for Dose Reductions
- Neutrophil ANC ≤ 500
- Ratio 
  - Hb > 10 g/dL
  - White blood cell ≤ 10,000
  - Hemoglobin > 7.5 g/dL

### If Hematologic Toxicity Occurs
- Discontinue Hydroxyurea until counts recover (usually 8-7 days)
- Restart at same dose if threshold is again reached, reduce to previous dose and that is maximum therapeutic dose

### Prior to starting Hydroxyurea
- Ensure the following is reviewed:
  - Details of VOC episodes – number and severity
  - Evidence of organ damage – TCD velocities, proteinuria, hypoxemia, academic performance
  - Does the patient have sleep apnea?
  - Psychosocial issues which may impact compliance with treatment regimen such as transportation, and finances for drug coverage
  - Document growth and development
  - Through physical examination
  - Document discussion, history and physical including height and weight, oxygen saturations, and laboratory results

### Dissolve and Dose Drug Administration
- **Chemotherapy At Home:** Safely Handling and Giving Medicines
- **Chemotherapy At Home:** Safely Giving Your Child Capsules
- **Hydroxyurea Education and Discussions Tip Sheet**

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5.0 References


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9. Ware, RE. How I use hydroxyurea to treat sickle cell disease. Blood 1 July 2010. Vol 115, Number 26

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Attachments:

Hydroxyurea Education and Discussions Tip Sheet.pdf
Revision History.docx
scd_hydroxyurea_v4_2021.pdf