Policy statement

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

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.
Sickle Cell Disease: Guidelines to Hydroxyurea

Prior to starting hydroxyurea ensure that the following is reviewed:

- Details of VOC episodes - number and severity
- Evidence of organ damage - TCD velocities, proteinuria, hematuria, academic performance
- Does the patient have sleep apnea?
- Psychosocial issues which might impact compliance with treatment regimen such as transportation, and finances for drug coverage
- Document growth and development
- Thorough physical examination
- Document discussion, history and physical including height and weight, oxygen saturation, and laboratory reports

Indications for hydroxyurea:

- ≥6 months of age, children, and adolescents with SCA, offer treatment with hydroxyurea regardless of clinical severity to reduce SCD-related complications. Refer to NIH guidelines
- If hospitalization for Vaso-Occlusive Crisis (VOC) episodes in a 2-month calendar period
- A total of 3 days missed from schoolwork due to VOC pain managed at home regardless of whether it is hospital admissions.
- Severe Thrombocytopenia (TCD) is patient requiring transfusion therapy
- Chronic hypertension
- Low hemoglobin - <90g/L
- High conditional TCD velocities
- Presence of patient suffers an episode of acute chest syndrome
- Poor growth and development

Consider dose escalation
Refer to e-formulary

NO

YES

Does child meet indications to start hydroxyurea?

Discuss and decide on alternative therapy with child and caregivers.

Hematology team to obtain consent from child and caregivers.

Does child and/or caregivers provide consent to initiate hydroxyurea?

Discuss alternate therapies if any are available.

Prior to initiating hydroxyurea please ensure the following is completed:

- Refer to tip sheet on Hydroxyurea Education for detailed information
- Bloodwork
- Patient education and ensure there is an ongoing discussion
- Develop a treatment plan
- Write prescription
- Initial dose at home

Ongoing monitoring of bloodwork

Is the bloodwork below threshold?

HbF or clinical target achieved?

Reduce and/or hold dose

Consider dose escalation. Refer to e-formulary

Continue with same dose

Indication for reduced:

- Neurologic NC, <0.5 x 10^6/L
- Retic count < 4 x 10^11/L
- Platelets: <80 x 10^9/L
- Hemoglobin <70g/L

If Hematocrit Toxicity Occurs:

- Macrolide Hydroxyurea until counts recover (usually 5-7 days)
- Restart at same dose. If threshold is again reached, reduce to previous dose and that is maximum therapeutic dose

Patient and Family Involvement

- Clinical effect
- Review of VOC episodes with family
- Side effects
- Hematologic toxicity and beneficial effects
- Ensure patient and family engaged in management. This improves compliance and reduces confidence in taking the drug
- Celebrate beneficial effects, and屏 time when side effects occur. Share graphs of response e.g., MCV, Hb F %

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Sickle Cell Disease: Guidelines to Hydroxyurea

Related Documents

Dissolve and Dose Drug Administration
Chemotherapy At Home: Safely Handling and Giving Medicines
Chemotherapy At Home: Safely Giving Your Child Capsules

References


7. The effect of prolonged administration of Hydroxyurea on morbidity and mortality in adult patients with sickle cell syndromes: results of a 17-year, single center trial (LaSHS). Blood 2010;115(12):2354-2363


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_final.pdf

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