Hydroxycarbamide Therapy

INDICATIONS FOR USE:

INDICATION	ICD10	Regimen Code	HSE approved reimbursement status*
Treatment for patients with high risk myeloproliferative neoplasms	C94	00581a	CDS
Treatment of leucocytosis in AML and CML	C92	00581b	CDS

* This applies to post 2012 indications only

TREATMENT:

The starting dose of the drugs detailed below may be adjusted downward by the prescribing clinician, using their independent medical judgement, to consider each patients individual clinical circumstances.

Hydroxycarbamide is administered orally once daily on a continuous basis (1 cycle = 28 days) until disease progression or unacceptable toxicity develops.

Drug	Dose	Route	Cycle
Hydroxycarbamide	1000mg[a]	PO[b, c]	Continuous
[a] Licensed dose is 20-30 mg/kg given daily in single doses. Dosage should be based on the patient's actual or ideal weight, whichever is the less. Higher doses may rarely be needed for resistant patients/ urgent cytoreduction, but these patients should be monitored very closely. Elderly patients may be more sensitive to the effects of hydroxycarbamide, and may require a lower dosage regimen and upward titration based on counts and tolerability.			
[b] Disposable gloves should be worn when handling hydroxycarbamide. Anyone handling hydroxycarbamide should wash their hands before and after contact with the capsules.			
[c] If the patient prefers, or is unable to swallow capsules, the contents of the capsules may be emptied into a glass of water and taken immediately. The contents of capsules should not be inhaled or allowed to come into contact with the skin or mucous membranes. Spillages must be wiped immediately.			

ELIGIBILITY:

- Indications as above

CAUTIONS:

- Caution should be used when treating patients on concomitant HIV medication.

EXCLUSIONS:

- Hypersensitivity to hydroxycarbamide or to any of its excipients
- Leucopenia (<2.5 WBC x 10^9/L)
- Thrombocytopenia (<100 x 10^9/L)
- Severe anaemia
- Pregnancy / breastfeeding

PRESCRIPTIVE AUTHORITY:

The treatment plan must be initiated by a Consultant Haematologist working in the area of haematological malignancies

TESTS:

Baseline tests:

- FBC, renal and liver profile
- Vitamin B12, iron, folate*
- Uric acid, LDH
- Bone marrow examination

Regular tests:

- FBC as clinically indicated
- Renal and liver profile as clinically indicated
- LDH

* Hydroxycarbamide causes macrocytic red cell indices and may mask iron, B12 or folic acid deficiency.

Disease monitoring:

Disease monitoring should be in line with the patient's treatment plan and any other test/s as directed by the supervising Consultant.

DOSE MODIFICATIONS:

- Any dose modification should be discussed with a Consultant.

Haematological:

Table 1: Dose modification of hydroxycarbamide in haematological toxicity

ANC (x10^9/L)	WBC (x10^9/L)		Platelets (x10^9/L)	Dose
≥1.5	≥2.5		≤100	100%
<1.5	<2.5	or	<100	Interrupt treatment until recovery*
*Counts should be rechecked after 3 days and treatment resumed when they rise significantly towards normal.				

Renal and Hepatic Impairment:

Table 2: Dose modification of hydroxycarbamide[a] in renal and hepatic impairment

Renal Impairment		Hepatic Impairment
CrCl (mL/minute)	**Dose**	No need for dose adjustment is expected. Monitor for haematological toxicity.
≥ 60	No dose adjustment is needed	
< 60	50% of the original dose	
Haemodialysis	50% of the original dose following haemodialysis	
[a]Hydroxycarbamide: Renal and hepatic dose modifications from Giraud et al 2023		

Management of adverse events:

Table 3: Dose Modification of hydroxycarbamide for Adverse Events

Adverse reactions	Recommended dose modification
Cutaneous vasculitic ulcers	Discontinue treatment

SUPPORTIVE CARE:

EMETOGENIC POTENTIAL:

- As outlined in NCCP Classification Document for Systemic AntiCancer Therapy (SACT) Induced Nausea and Vomiting linked here

Hydroxycarbamide: Minimal to Low (**Refer to local policy)**

For information:
Within NCIS regimens, antiemetics have been standardised by the Medical Oncologists and Haemato-oncologists. Information is available in the following documents:

- NCCP Supportive Care Antiemetic Medicines for **Inclusion in NCIS** (Medical Oncology) - link here
- NCCP Supportive Care Antiemetic Medicines for **Inclusion in NCIS** (Haemato-oncology) - link here

PREMEDICATIONS:

- None usually required

OTHER SUPPORTIVE CARE:

- Tumour lysis prophylaxis (**Refer to local policy)**
- Antiplatelet therapy (usually indicated if PV/ET) +/- gastro-protection (**Refer to local policy)**
- Both male and female patients should be counselled concerning the use of effective contraceptive measures before and during treatment with hydroxycarbamide. Men under therapy are advised to use contraceptive measures during and for at least 3 months after therapy and females of reproductive potential, during therapy and for at least 6 months after.

ADVERSE EFFECTS:

- Please refer to the relevant Summary of Product Characteristics (SmPC) for details.

REGIMEN SPECIFIC COMPLICATIONS

- Hydroxycarbamide may cause drowsiness. Patients receiving it should not drive or operate machinery unless it has been shown not to affect physical or mental ability
- **Haemolytic anaemia**: Cases of haemolytic anaemia have been reported in patients treated with hydroxycarbamide for myeloproliferative diseases. Patients who develop persistent anaemia should have laboratory tests evaluated for haemolysis. If a haemolytic anaemia is confirmed, hydroxycarbamide should be discontinued.
- **Interstitial lung disease**: Interstitial lung disease including pulmonary fibrosis, lung infiltration, pneumonitis, and alveolitis/allergic alveolitis have been reported in patients treated for myeloproliferative neoplasm and may be associated with fatal outcome. Patients developing pyrexia, cough, dyspnoea or other respiratory symptoms should be closely monitored, investigated and treated. Prompt discontinuation of hydroxycarbamide and treatment with corticosteroids appears to be associated with resolution of the pulmonary events.
- Hydroxycarbamide may falsely elevate sensor glucose results from certain continuous glucose monitoring (CGM) systems which may lead to hypoglycaemia if sensor glucose results are relied upon to dose insulin. If CGM systems are to be used concurrently with hydroxycarbamide treatment, consult with the CGM prescriber about the need to consider alternative glucose monitoring methods.

DRUG INTERACTIONS:

- Current SmPC and drug interaction databases should be consulted for information.

REFERENCES:

1. Cortelazzo S et al. Hydroxyurea for patients with essential thrombocythemia and a high risk of thrombosis. N Engl J Med. 1995 Apr 27;332(17):1132-6. doi: 10.1056/NEJM199504273321704. PMID: 7700286.
2. Giraud E L, Lijster B D, et al. Dose recommendations for anticancer drugs in patients with renal or hepatic impairment: an update. Available at: https://pubmed.ncbi.nlm.nih.gov/37269847/
3. NCCP Classification Document for Systemic Anti-Cancer Therapy (SACT) Induced Nausea and Vomiting. V5 2023. Available at: https://www.hse.ie/eng/services/list/5/cancer/profinfo/chemoprotocols/nccp-classification-document-for-systemic-anti-cancer-therapy-sact-induced-nausea-and-vomiting.pdf
4. Hydroxycarbamide (Hydrea®) Summary of Product Characteristics. Last updated: 05/12/2024. Accessed: 06/02/2025. Available at: https://assets.hpra.ie/products/Human/12761/Licence_PA2239-021-001_05122024151342.pdf

Version	Date	Amendment	Approved By
1	05/03/2025		Dr. Claire Andrews

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