Management of Hyperleucocytosis in Paediatric Oncology

Identify risk of Leucostasis in new patients presenting with high count Leukaemia,
more likely if presenting count
➢50 x 10^9/l in monocytic AML or
➢>>100 x 10^9/L in ALL
Patients with high counts are at risk of serious complications and death from leucostasis, tumour lysis syndrome and disseminated intravascular coagulopathy.. Commence appropriate management and discuss patient urgently with PTC.

cases of high WCC may require leukapheresis consider need for urgent PICU referral and retrieval complete SORT form and discuss safety of transfer with PICU & PTC consultant

CAREFUL CLINICAL ASSESSMENT

- ➢Assess for signs and symptoms of leucostasis
- ➢Commence regular observations including neurological observations
- ➢Take new leukaemia bloods (see table in new patient guideline) and ask for an urgent film in particular: FBC, Coag, TLS bloods (see TLS flow-sheet)
- ➢Start 3L/m2/day IV fluids without additional KCL (if evidence of superior vena cava obstruction give via lower limb)
- ➢Perform respiratory assessment and CXR to exclude mediastinal mass.
- ➢Ophthalmology r/v for retinal haemorrhage

Symptoms / Signs of Leucostasis
PULMONARY: Tachypnoea, hypoxia, cyanosis, pulmonary infiltrate
CNS: Headache, confusion, ataxia, seizures, focal neurology, drowsiness
OPHTHALMOLOGY Blurred vision, papilloedema, retinal haemorrhage
OTHER: Plethora, priapism

- In case of anaemia aim not to transfuse as risks of increased viscosity, discuss with PTC consultant if considering.
- In case of thrombocytopenia aim to keep platelets >50 x 10^9/l.
- In case of coagulopathy for elevated PT or APTT > 3 secs above normal range and active bleeding consider 15ml/kg FFP (fresh frozen plasma) and reassess.
- If fibrinogen <1 and active bleeding consider 5ml/kg cryoprecipitate and reassess.

Ongoing Monitoring:

- Monitor fbc, coag, tumour lysis bloods 4hrly
- Regular fluid balance assessment
- BD weights
- Regular neuro and respiratory assessment

PTC considerations

- High count AML: urgent chemotherapy may be required.
- Aim to avoid transfusion if necessary give cautiously and consider need for leukopharesis/exchange.
- Falsely high platelet counts can occur as fragmented WBC can be mis-counted for platelets. Check the blood film if there is a clinical suspicion of low platelets.

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