

BCCA Protocol Summary for Myeloablative Conditioning Therapy Prior to Autologous and Allogeneic Hematopoietic Stem Cell Transplantation for Myeloid Malignancies Using IV Busulfan and Cyclophosphamide

Protocol Code: *BMTIVBUCY*

Tumour Group: *Leukemia/BMT*

Contact Physician: *Dr. Donna Hogge*

ELIGIBILITY:

- Patients with myeloid malignancies and good performance status and organ function suitable for myeloablative therapy followed by autologous and allogeneic stem cell transplantation.

EXCLUSIONS:

- Age greater than 65 years

TESTS:

- Baseline, then as indicated: CBC & differential, electrolytes, creatinine, bilirubin, alkaline phosphatase, magnesium, chest X-ray, pulmonary function tests, EKG, viral serology
- If clinically indicated: LVEF, bone marrow aspiration and biopsy

PREMEDICATIONS:

- Ondansetron 8mg PO/IV pre-chemotherapy then q12hours until 24 hours after chemotherapy completed
- Lorazepam 1mg PO/SL q12h and Dexamethasone 8mg PO/IV q12h with ondansetron
- Phenytoin 16mg/kg PO in 3 to 4 divided doses on day -8 followed by 5mg/kg PO daily at bedtime from day -7 through -3 inclusive.

TREATMENT:

Drug	Dose	BCCA Administration Guideline
IV Busulfan	3.2 mg/kg/day X 4 days (day -7 through day -4 prior to ASCT)	IV over 3 hours at a concentration of 0.5mg/ml in NS
Cyclophosphamide	60 mg/kg /day x 2 days (day -3 and -2 prior to ASCT)	IV in 500 ml NS over 2 hours, 4 hours after starting hyperhydration at 3000 ml/m ² /day. Hyperhydration to continue until 48 hours after last dose of

		cyclophosphamide.
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PRECAUTIONS:

1. **Neutropenia:** Fever or other evidence of infection must be assessed promptly and treated aggressively.
2. **Thrombocytopenia:** Support with platelet transfusion will be required.
3. **General:** This protocol should be used only in an inpatient setting and supervised by physicians experienced in the use of myeloablative regimens and stem cell transplantation.

Call Dr. Donna Hogge at (604) 875-4863 with any problems or questions regarding this treatment program.

Date activated: 01 Jul 2003

Date revised: 01 May 2009 (unsafe abbreviations and symbols replaced)

References:

1. Andersson BS et al. Allogeneic stem cell transplantation (BMT) for AML and MDS following i.v. busulfan and cyclophosphamide (i.v. BuCy). Bone marrow Transplantation 25: (Suppl 2) S35 – S38, 2000.
2. Kashyap A et al. Intravenous (IV) vs oral busulfan (BU) as part of a Bu/Cy preparative regimen for allogeneic hematopoietic stem cell transplantation (HSCT): decreased incidence of hematic veno-occlusive disease (VOD). Blood 94 (Suppl 1): 321b, 1999.
3. Andersson BS et al. Conditioning therapy with intravenous busulfan and cyclophosphamide (IV BuCy2) for hematologic malignancies prior to allogeneic stem cell transplantation: a phase II study. Biology of Blood and Marrow Transplantation 8: 145 -154, 2002