

# BC Cancer Protocol Summary of the Conditioning Therapy for Autologous Stem Cell Transplant using high dose Melphalan in the Treatment of Multiple Myeloma

**Protocol Code**

*BMTMM0301*

**Tumour Group**

*Leukemia/BMT*

**Contact Physician**

*Dr. Kevin W. Song*

**ELIGIBILITY:**

- Patients with multiple myeloma with good performance status and organ function suitable for autologous stem cell transplantation.

**EXCLUSIONS:**

- Age greater than 70 years.

**TESTS:**

- Baseline, then as indicated: CBC & diff, sodium, potassium, creatinine, bilirubin, alk phos, LDH, magnesium, & calcium.

**PREMEDICATIONS:**

- ondansetron 8 mg PO/IV pre-chemotherapy then q12h x 4 doses
- dexamethasone 8 mg PO/IV pre-chemotherapy then q12 h x 4 doses

**TREATMENT:**

Drug	Dose	BC Cancer Administration Guideline
melphalan	200 mg/m <sup>2</sup> day –1 of PBSCT	<p>IV in 500 mL NS</p> <p>Concentration of IV bag must be between 0.1 mg/mL and 0.45 mg/mL (maximum of 272 mg in 500 mL NS). If the dose is greater than 272 mg, Pharmacy will divide the dose into TWO bags of 500 mL NS.</p> <p>Administer each bag over 15 to 60 minutes to prevent drug degradation.</p> <p>Hydrate with D5W-1/2NS with potassium chloride 20 mEq/L and magnesium sulfate 1 g/L IV at 250 mL/h for 2 hours pre and post melphalan.</p>

## DOSE MODIFICATIONS:

### 1. Renal Dysfunction

Dose modifications required for melphalan:

Creatinine Clearance (mL/min)	Dose
greater than or equal to 50	200 mg/m <sup>2</sup>
Less than 50 *	140 mg/m <sup>2</sup>

\* A melphalan dose of 100 mg/m<sup>2</sup> is not optimal treatment for plasma cell dyscrasias, but may be considered in individual patients, especially if other (non-renal function-related) medical concerns have been identified. Dialysis-dependent patients will require ongoing dialysis to be co-ordinated with the Nephrology Service.

## PRECAUTIONS:

- Neutropenia:** Fever or other evidence of infection must be assessed promptly and treated aggressively.
- Thrombocytopenia:** Support with platelet transfusion may be required.

**Call Dr. Kevin Song or Dr. Donna Hogge (tumor group leader) at (604) 875-4863 with any problems or questions regarding this treatment program.**

## References<sup>1-6</sup>:

- Moreau P, Facon T, Attal M, et al. Comparison of 200 mg/m<sup>2</sup> melphalan and 8 Gy total body irradiation plus 140 mg/m<sup>2</sup> melphalan as conditioning regimens for peripheral blood stem cell transplantation in patients with newly diagnosed multiple myeloma: final analysis of the Intergrroupe Francophone du Myelome 9502 randomized trial. *Blood* 2002;99(3):731-5.
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- Lahuerta JJ, Martinez-Lopez J, Grande C, et al. Conditioning regimens in autologous stem cell transplantation for multiple myeloma: A comparative study of efficacy and toxicity from the Spanish Registry for transplantation in multiple myeloma. *Br J Haematol* 2000;109(1):138-47.
- Vesole DH, Crowley JJ, Catchatourian R, et al. High-dose melphalan with autotransplantation for refractory multiple myeloma: Results of a Southwest Oncology Group phase II trial. *J Clin Oncol* 1999;17(7):2173-9.
- Child JA, Morgan GJ, Davies FE, et al. High-dose chemotherapy with hematopoietic stem-cell rescue for multiple myeloma. *N Engl J Med* 2003;348(19):1875-83.
- Nieto Y, Vaughan WP. Pharmacokinetics of high-dose chemotherapy. *Bone Marrow Transplant* 2004;33(3):259-69.
- Hogge D, Nevill T, Warkentin D. HSCT criteria and work-up: patient stem cell transplant work-up – renal function guidelines. In: *Leukemia/BMT Manual*; 6<sup>th</sup> ed. Vancouver, BC: Leukemia/Bone Marrow Transplant Program of British Columbia; September 2008. p. 28.