

Comparison of high dose melphalan and busulfan plus melphalan as a conditioning regimen

서울대학교병원 혈액종양내과

박송이, 변자민, 윤성수, 고영일, 신동엽, 홍준식, 김인호

Background/Aims: High dose melphalan (HDMEL) is considered the standard conditioning regimen for autologous stem cell transplantation in multiple myeloma patients. Recent studies showed that busulfan plus melphalan (BUMEL) was comparable to HDMEL as conditioning regimen. We compared the efficacy of HDMEL and BUMEL in multiple myeloma who underwent autologous stem cell transplantation with a conditioning regimen.

Methods: This is a single-center, retrospective study including multiple myeloma patients who underwent autologous stem cell transplantation with a conditioning regimen in Seoul National University Hospital between December 2015 and December 2019.

Results: A total of 113 patients with a median age of 57.0 years (range : 33 – 64 yrs) at autologous stem cell transplantation were included. Eighty-one (71.7%) received HDMEL and 32 (28.3%) received BUMEL as a conditioning regimen. Median progression free survival (PFS) for BUMEL was not reached while the median PFS for HDMEL was 31.5 months (HR 1.052, 95% confidence interval [CI] 0.496-2.228, $p = 0.895$). Some side effect showed significantly difference between HDMEL and BUMEL. BUMEL group showed more mucositis ($p = 0.002$) and thrombocytopenia requiring transfusion ($p = 0.035$), higher aspartate aminotransferase level ($p = 0.031$), longer hospitalization ($p = 0.000$) than HDMEL group.

Conclusions: BUMEL showed similar efficacy compared to HDMEL. But we should be careful in terms of toxicity with BUMEL.

TABLE 1 Baseline characteristics

Characteristics	HDMEL (N=101, 71.7%)	BUMEL (N=39, 28.3%)	P
Age at diagnosis	Median (range, range)	Median (range, range)	0.602
Age at autotct	Median (range, range)	Median (range, range)	0.000
Sex	Male	Male	0.103
Performance status	ECOG 0-1	ECOG 0-1	0.000
CRP	ECOG 0-1	ECOG 0-1	0.103
	ECOG 2-3	ECOG 2-3	
	ECOG 4-5	ECOG 4-5	
Hb	ECOG 0-1	ECOG 0-1	0.103
	ECOG 2-3	ECOG 2-3	
	ECOG 4-5	ECOG 4-5	
WBC	ECOG 0-1	ECOG 0-1	0.103
	ECOG 2-3	ECOG 2-3	
	ECOG 4-5	ECOG 4-5	
Platelet	ECOG 0-1	ECOG 0-1	0.103
	ECOG 2-3	ECOG 2-3	
	ECOG 4-5	ECOG 4-5	
Albumin	ECOG 0-1	ECOG 0-1	0.103
	ECOG 2-3	ECOG 2-3	
	ECOG 4-5	ECOG 4-5	
Creatinine	ECOG 0-1	ECOG 0-1	0.103
	ECOG 2-3	ECOG 2-3	
	ECOG 4-5	ECOG 4-5	
Calcium	ECOG 0-1	ECOG 0-1	0.103
	ECOG 2-3	ECOG 2-3	
	ECOG 4-5	ECOG 4-5	
Hemoglobin	ECOG 0-1	ECOG 0-1	0.103
	ECOG 2-3	ECOG 2-3	
	ECOG 4-5	ECOG 4-5	
Hemoglobin	ECOG 0-1	ECOG 0-1	0.103
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