

## HIGH-DOSE MELPHALAN ON DAY 2 VERSUS 1 PRIOR TO AUTOLOGOUS STEM CELL TRANSPLANTATION IN MULTIPLE MYELOMA

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**Background:** High-dose melphalan (HDM) is the standard conditioning regimen used in autologous stem cell transplantation (ASCT) for multiple myeloma (MM). It is usually administered on d-2, d-1, or on 2 consecutive days (d-2 and d-1). A delay of at least 24 hours ("rest day") is usually observed before reinjecting stem cells to avoid HDM toxicity.

**Methods:** We conducted a retrospective case control study between January 2019 and December 2021, comparing early posttransplant outcomes in MM patients receiving HDM on day-2 vs day-1 prior to ASCT.

**Results:** Between January 2019 and December 2021, 19 patients received HDM on day-1 in our center. We constituted a control group of 37 patients who received HDM on day-2, matched according to age, gender, induction therapy, pre-transplant disease status and graft richness. Baseline disease and clinical characteristics were similar between the two groups (mean age= 55 years, sex-ratio 0.8). There were no significant differences between the two groups in terms of common transplant-related toxicity : occurrence of grade III-IV mucositis (45% for day-1 vs 40% for day-2,  $p = 0.7$ ), duration of grade III-IV mucositis (average 4.3 days for day-1 vs 5 days for day-2,  $p = 0.6$ ), number of febrile neutropenia episodes (average 1.5 for day-1 vs 1.6 for day-2,  $p = 0.6$ ), time to hematologic recovery (neutrophil engraftment : median d+12 for day-1 vs d+11 for day-2,  $p = 0.4$ , platelet engraftment : median d+13 for day-1 vs d+12 for day-2,  $p=0.5$ ), transfusion requirements, and length of hospital stay : average 20 days for day-1 vs 22 days for day-2,  $p = 0.09$ ).

**Conclusions:** In our experience, no additional toxicity was observed in patients who received HDM on d-1 compared with those who received it on d-2. Given the small sample size and methodological bias, these results remain to be confirmed by a large randomized study.