

Efficacy of autologous stem cell transplantation in multiple myeloma patients with renal failure

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Background

According to the Russian register renal impairment at the time of diagnosis was noted in every fifth patient with multiple myeloma (MM).

Objective

To study the efficacy and safety of high dose therapy followed by ASCT in patients with MM and renal failure

Materials & Methods

A retrospective single-center study was performed, including 64 (30 males, 34 females) MM patients with renal failure aged 19 to 65 years (median 54) underwent ASCT during a period from 2013 to 2019. At the time of diagnosis median of serum creatinine level was 462 $\mu\text{mol/L}$, and median of GFR was 10 ml/min/1.73 m² (CKD-EPI). 23 patients (36%) were dialysis-dependent at the time of diagnosis. Before ASCT the overall response rate was documented in 91% of cases. Renal response was achieved in 80% of patients. In 13 of 23 cases (57%) dialysis was stopped after induction therapy. 10 patients were dialysis-dependent at the time of ASCT. The analysis was carried out in subgroup A - patients without dialysis at the time of ASCT (n = 54), subgroup B - dialysis-dependent patients at the time of ASCT (n = 10).

Summary

In subgroup B patients compared to subgroup A patients significant differences were observed in a requirement of the red blood cell transfusions (100% vs 37%, p = 0.001). 100 days after ASCT the achievement of the overall response rate increased from 91 to 96%, the percentage of CR increased from 45% to 64%. After auto-HSCT, there was an increase in the rate of achieving complete renal responses - from 28% to 34%. In one case dialysis was stopped after the transplantation. So, at the time of diagnosis 23 patients were dependent on the renal replacement therapy. As a result of the treatment (induction therapy with auto-HSCT), 14 patients (61%) became hemodialysis-independent. Follow-up of these patients lasts from 1.5 to 7 years. There was no transplant-related mortality. After a median follow-up of 48 months 5-year overall survival (OS) was 70%, and 5-year progression-free survival (PFS) was 42%.

Discussion

ASCT is feasible, safe and effective method of the treatment in MM patients with severe kidney injury. In our study 14 of 23 patients (61%) became dialysis independent. Overall, this work confirmed dialysis-dependent MM patients should not be excluded from high dose therapy followed by ASCT.

Key words

multiple myeloma , autologous stem cell transplantation, renal failure, renal response