

Editorial

Multiple myeloma and the treatment related renal recovery

Nonglak Kanitsap

Division of Hematology, Department of Medicine, Thammasat University, Rungsit campus, Pathumthani

Multiple myeloma (MM) is the clonal proliferation of a neoplastic plasma cells in the bone marrow secrete monoclonal immunoglobulins detectable in serum and/or urine.¹⁻⁴ Renal impairment is a common complication in multiple myeloma patients, affecting about 20-50% at diagnosis, caused by abnormal immunoglobulin.^{5,6}

Serum free light chain (sFLC) is a key risk factor affecting renal recovery, but there are several potential risk factors for renal impairment.^{7,8} Starting treatment in newly diagnosed multiple myeloma (NDMM) patients with renal impairment (RI) as soon as possible after RI detection and achieving deep hematologic remission within 3 cycles of treatment make good prognosis for achieving renal recovery and good clinical outcomes. If renal impairment was treated and achieved recovery, the median survival of the patients also improved.⁹

Anti-proteasomes and other anti-myeloma showed various response and reversibility effect on renal impairment.^{1,2,10,11} Bortezomib-based regimens are currently the cornerstone of the management of NDMM with RI, including in individuals requiring dialysis. Due to limited resources for novel agent treatments, the result of myeloma treatment and renal response for some patients may not be good enough.¹² The CyDex regimen, regimen containing cyclophosphamide and dexamethasone, for whom cannot receive novel agent, is a notable and effective alternative, especially for patients with renal impairment, offering significant advantages, particularly in resource-limited healthcare settings.¹² However, since the result of novel agent free treatment was not as good as novel agent including regimen, the expert society incorporation with responsible department should try to find some ways of solving the limited resource

problem in the future. And importantly, as the international myeloma working group recommendation⁸, the management of myeloma-related renal impairment by immediately starts antimyeloma therapy together with adequate supportive care includes adequate hydration with fluids (≥ 3 L/d, approximately 2 L/m²/d) and careful monitoring of fluid balance will reduce the load of toxic FLCs and thus improve renal function.

Reference

1. Elena Zamagni, Simona Barbato, Michele Cavo. How I treat high-risk multiple myeloma. *Blood*. 2022;139(19):2889-903.
2. Andrew J. Cowan, Damian J. Green, Mary Kwok, Sarah Lee, David G. Coffey, Leona A. Holmberg, et al. Diagnosis and Management of Multiple Myeloma. A Review. *JAMA*. 2022;327(5):464-77.
3. Moreau P, Kumar SK, San Miguel J, Davies F, Zamagni E, Bahlis N, et al. Treatment of relapsed and refractory multiple myeloma: recommendations from the International Myeloma Working Group. *The Lancet Oncology*. 2021;22:e105-e18.
4. SV Rajkumar, MA Dimopoulos, APalumbo, et al. International myeloma working group updated criteria for the diagnosis of multiple myeloma. *Lancet Oncol*, 15 (2014), pp. e538-e548.
5. RA Kyle, MA Gertz, TE Witzig, et al. Review of 1,027 patients with newly diagnosed multiple myeloma. *Mayo Clin Proc*. 2003;78:21-33.
6. 3. M Kleber, G Ihorst, B Deschler, et al. Detection of renal impairment as one specific comorbidity factor in multiple myeloma: multicenter study in 198 consecutive patients. *Eur J Haematol*. 2009;83:519-27.
7. BM Augustson, G Begum, JA Dunn, et al. Early mortality after diagnosis of multiple myeloma: analysis of patients entered onto the United Kingdom Medical Research Council trials between 1980 and 2002 Medical Research Council Adult Leukaemia Working Party. *J Clin Oncol*. 2005;23:9219-26.
8. MA Dimopoulos, P Sonneveld, NLeung, et al. international myeloma working group recommendations for the diagnosis and management of myeloma-related renal impairment. *J Clin Oncol*. 2016;34:1544-57.
9. WI Gonsalves, N Leung, SV Rajkumar, et al. Improvement in renal function and its impact on survival in patients with newly diagnosed multiple myeloma. *Blood Cancer J*. 2015;5:e296.

10. MA Dimopoulos, PG Richardson, RSchlag, et al. VMP (Bortezomib, Melphalan, and Prednisone) is active and well tolerated in newly diagnosed patients with multiple myeloma with moderately impaired renal function, and results in reversal of renal impairment: cohort analysis of the phase III VISTA study. *J Clin Oncol.* 2009;27:6086-93.
11. JP Fermand, F Bridoux, RA Kyle, et al. How I treat monoclonal gammopathy of renal significance (MGRS). *Blood.* 2013;122:3583-90.