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Reduced intensity and myeloablative conditioning regimens for hematopoietic stem cell transplantation in patients with myeloid and lymphoid malignancies: A meta-analysis

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The reduced intensity conditioning (RIC) stem cell transplantation is widely used for treatment of many hematologic malignancies. This study was undertaken to determine if any significant difference could be found respectively by using RIC versus myeloablative conditioning (MAC) regimen for transplantation on myeloid and lymphoid malignancies and provided the comparison on outcomes in survival and complications.

Methods: We electronically searched the database of Cochrane Central Register of Controlled Trials (CENTRAL), Pubmed, EMbase, and critically appraised all relevant articles (1987.01–2011.03). Comparative studies were carried out on clinical therapeutic effect of RIC and MAC with research on survival, GVHD, relapse, and transplantation related complications (TRM). Meta-analysis was performed by Review Manager 5.0.0.32 software and the funnel plot regression was adopted to assess the publication bias.

Results: We get 1710 records, and 12 studies contained 6 for myeloid malignancies and 6 for lymphoid malignancies totaling 4240 patients have been included. Pooled comparisons of studies of RIC and MAC in transplantation found that different diseases and different conditioning regimen had impact on the outcome. For both myeloid and lymphoid malignancies, compared with MAC regimen, the RIC regimen had significantly lower incidences of TRM (OR=0.56 and 0.52 respectively, P<0.001), higher relapse rates (OR=1.85 and 3.16 respectively, P<0.001) and lower rates of DFS (OR=0.72 and 0.67 respectively, P<0.05), but the overall survival (OS) is similar between the 2 regimens. Patients with myeloid malignancies had significantly lower rates of relapse, higher rates of ≥II degree aGVHD and cGVHD than patients with lymphoid malignancies, and the two types of malignancies have similar rates of DFS.

Conclusions: This meta-analysis confirmed that different regimen has different effect on the outcome and proposed regimen selection for treatment of hematologic malignancies.