U. Platzbecker, Dresden

Because myelodysplastic syndromes (MDS) are a disease of the elderly population, there are potential risks from intensive treatment approaches. Whereas in low-risk MDS supportive care only can be considered in many patients, in high-risk MDS the considerable rate of AML transformation as well as mortality from infectious complications make therapeutic approaches desirable, which can alter the disease history.

In low-risk MDS supportive therapy with growth factors like erythropoietin yields erythroid responses in up to 20-30% of selected patients. Additionally, thrombopoetin receptor agonists seem to be a potent strategy in reducing the risk of bleeding in patients with severe thrombocytopenia. The innovative use of immunomodulatory drugs like lenalidomide potentially offers the greatest potential to achieve long-term transfusion independence for selected karyotypes. Indeed, lenalidomide yields cytogenetic remissions and durable erythroid responses in MDS patients with chromosome 5q deletion. Other therapeutic approaches include the use of HDAC-inhibitors.

In high-risk MDS treatment with DNA-methyltransferase inhibitors (MTI) such as 5-azacytidine, has changed the natural course of the disease and prolonged survival compared to supportive care only. However, with the rare exception of patients who achieve long lasting remissions with chemotherapy, allogeneic hematopoietic stem cell transplantation (HSCT) is currently the only modality with proven curative potential. Although improvements in donor selection, post-grafting immunosuppression and supportive therapy have been achieved, allogeneic HSCT after standard conditioning remains restricted to a small minority of younger patients. The development of reduced intensity conditioning regimens may allow patients with higher age or comorbidities to undergo this procedure. Published reports suggest that allogeneic HSCT can be successful in elderly patients and possibly provide a survival advantage compared to non-transplant approaches. However, a reduction in the intensity of the preparative regimen is associated with a higher risk of relapse after HSCT. Identification of clinical markers, which might help in selecting older patients who are likely to benefit from HSCT and in determining the optimum time point for HSCT would be helpful. Current approaches focus on the relevance of pre-transplant therapy with additional efforts to integrate preemptive strategies post transplantation in order to improve outcome of patients undergoing allogeneic HSCT.