

disease in the last decades cure has not been achieved. Clinical use of monoclonal antibodies targeting cluster of differentiation (CD) 38 or signaling lymphocyte activation molecular family 7 (SLAMF7) combined with immunomodulatory drugs and proteasome inhibitors lead to prolonged progression free survival in a group of relapsed refractory MM (RR MM) patients. High risk disease forms such as extramedullary involvement, advanced stage or poor cytogenetic features still suffer decreased survival. Novel immunotherapies targeting B cell maturation antigen (BCMA), G protein- coupled receptor family C group 5 member D (GPC5D), Fc receptor homolog 5 (FcRH5), CD138, CD 48, CD 56 and CD74 as well as cellular therapies such as chimeric antigen receptor (CAR) T / CAR NK cells therapies has been emerging. Daratumumab, elotuzumab and isotuxumab are approved monoclonal antibodies that have been in clinical use since 2015. Thereafter Belantamab mafodotin, AMG 224 and MEDI 2228 are the examples of antibody- drug conjugates with the approval of Belantamab after 4 lines of therapy in relapsed refractory MM. Teclistamab and elranatamab are the approved bispecific antibodies targeting BCMA on MM cells and CD3 on T lymphocytes. They both showed overall response rate exceeding 60 % in RRMM. Cytokine release syndrome was observed in two thirds of patients but were mostly low grade. Bispecifics showed objective responses on patients with prior antiBCMA targeted and CAR-T directed therapies. Two CAR T cell therapies has been approved in MM up to date. Idecabtagene vicleucel (ide-cel) and ciltacabtagene autotem (cilta-cel) are anti BCMA autologous CAR T cell products that have FDA approvals in RRMM. Both agents improved progression free survival compared to standard regimens. Allogeneic anti BCMA CAR T cells can also be an option in a near future based on earlier phase trials. Along with approved novel agents investigational studies for earlier lines of therapy and newer agents are emerging. Minimal residual disease (MRD) negativity is an emerging term for depth of response giving the possibility of cure and novel agents promise better MRD negativity as well as disease control.

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NOVEL MAINTENANCE THERAPIES IN ACUTE MYELOID LEUKEMIA: PROLONGING REMISSION AND IMPROVING OUTCOMES

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Maintenance therapy, defined as the administration of less intensive treatment following initial intensive induction and consolidation chemotherapy, has shown promise in enhancing long-term outcomes for AML patients. Allogeneic stem cell transplantation (HSCT) improves disease-free survival (DFS) in patients with AML who are suitable for transplantation. However, not all patients are suitable for transplantation. From past to present, maintenance treatment for AML has evolved from chemotherapy to immune modulatory and

targeted therapies. In the early studies, low-intensity chemotherapy was used in different combinations in maintenance treatment of AML, but it could not be shown to increase overall survival. In general, novel maintenance therapy includes HMAs, the combination of HMAs with other agents, and targeted therapies. HOVON97 trial showed that azacitidine maintenance after CR/CRi after intensive chemotherapy is feasible and significantly improves DFS. The most important trial regarding HMA care is the QUAZAR AML-001 trial. CC-486 (oral azacitidine) resulted in an improvement in OS compared with placebo at approximately 12 months of follow-up. In AML 342 trial, azacitidine/venetoclax maintenance therapy was tolerable and improved RFS in AML patients not eligible to HSCT. The SORAML study demonstrated improved EFS in the sorafenib arm in adult patients with AML regardless of FLT3 status (3-year EFS: 40% vs 22%), but there was no difference in OS. The phase III ADMIRAL trial led to the approval of gilteritinib as monotherapy in adult patients with relapsed or refractory FLT3-ITD/tyrosine kinase domain-mutated AML. In a long-term follow-up (37 months) of the trial, continued gilteritinib therapy preserved the superior OS. In the QuANTUM First trial, the addition of quizartinib to intensive chemotherapy followed by maintenance in patients with FLT3-ITD AML improved RFS and OS. In the phase I study, ivosidenib (n=60) or enasidenib (n=91) was added to intensive chemotherapy and continued as a maintenance agent until relapse, toxicity, or HSCT. Twelve-month OS was 75% in both groups. A phase I study of posttransplantation enasidenib (scheduled for 1 year) in 19 patients with IDH2 mutations showed 2-year PFS and OS to be 69% and 74%, respectively. In conclusion, maintenance treatment with HMAs with or without venetoclax is recommended for intermediate and adverse-risk AML patients. Corresponding inhibitor therapies can be used in patients with targetable mutations such as FLT3 and IDH.

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ADVANCES IN THALASSEMIA MANAGEMENT AND CHELATION THERAPY

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Autosomal recessive thalassemias are a heterogeneous group of diseases characterized by hypochromic microcytic anemia, which develops as a result of defective synthesis of one or more of the hemoglobin (Hb) chains. It occurs when the Hb chain or chains are produced in small numbers or not at all. In other words, while the production of beta chains is insufficient, the production of alpha chains causes alpha thalassemia. Approximately 3 babies in every 1000 births in the world are affected by severe beta chain disorders, and approximately 350,000 new babies with the disease are born each year. Even under modern treatment conditions, severe clinical complications may develop in the clinical follow-up of patients. In recent years, the introduction of oral chelators and the ability to determine organ iron load with non-