Acute lymphoblastic leukemia - Section 3

Progress in treatment of acute lymphoblastic leukemia in adults

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Considerable improvement of outcome has been achieved in pediatric and adult ALL in the past decade,[1] which is a major success also of multicenter study groups.[2] This improvement is so far mainly due to improved standard chemotherapy together with stem cell transplantation (SCT) in selected subgroups.[3] Optimal treatment regimens for ALL in general include intensive chemotherapy based on pediatric treatment principles modified for the use in adults. The major challenge is adaptation of treatment intensity to different age groups in adulthood.[4] Treatment was optimized by the use of targeted compounds like tyrosine kinase inhibitors or antibodies like rituximab.[5] The management of toxicities *e.g.* of essential drugs like asparaginase is of increasing importance in order to achieve the intended time and dose intensity of chemotherapy. Furthermore individualised treatment decisions according to the course of minimal residual disease6 are essential, not only to decide on the indication for SCT but also on the use of new compounds. A considerable number of new treatments are under clinical investigation in ALL. There is a focus on immunologic therapies for B-precursor ALL, due to the presence of target antigens like CD19 or CD22 in the majority of patients.[7-9] In other subgroups of ALL like *bcr-abl-like* ALL potential molecular targets are of therapeutic interest.[10] Specifically in this subtype it remains a challenge to decide whether and how to identify this group by regular diagnostics. In relapsed/refractory ALL immunologic treatment approaches have yielded promising results in terms of response rates. The major challenge for the future will be the optimal use in standard of care and the integration of new compounds in earlier treatment phases.

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