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POSTER ABSTRACTS

634.MYELOPROLIFERATIVE SYNDROMES: CLINICAL AND EPIDEMIOLOGICAL

Efficacy of Demethylated Drug Combine with Low Dose Chemotherapy in Juvenile Myelomonocytic Leukemia

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Objection:Juvenile myelomonocytic leukemia (JMML) is a rare pediatric leukemia with a median survival time of less than 2 years. Currently, hematopoietic stem cell transplantation (HSCT) is the only possible cure of JMML. Most of the newly diagnosed pediatric patients with JMML have high tumor burden, and rapid disease progression, and may not tolerate HSCT. In the present study, we aimed to explore the effection of Demethylated drug in combination with low-dose chemotherapy on JMML patients before HSCT. Methods:A retrospective analysis of 16 JMML patients was performed from Jul 2017 to Nov 2021. All patients were given Demethylated drug in combination with low-dose chemotherapy, 10 patients decitabine at a dose of 20 mg/m2 for 5 days, supplemented with cytarabine (50-100 mg/m2×3~5 days), and /or etoposide (50 mg/m2×3~5 days), 6 patients Azacytidine at a dose of 75mg/m2 for 7 days combined with homoharringtonine 2mg/m2 for 5-7 days. Each treatment interval was 4 weeks, bridging to HSCT after three~four courses of treatment. Results:The median age of onset of the 16 JMML patients was 36 months (range 6-51 months), the male to female ratio was 14:2, and the median volume of the spleen at diagnosis was 357cm3 (range: 175-588) by Three-dimensional ultrasound of spleen. The median white blood cell (WBC) count was 39 (range 2-128) × 109/L, the median hemoglobin 84 (range 47-110) g/l, and the median platelet 36 (range 16-75) × 109/L,the median monocyte count was 8 (range 2-26) × 109/L at diagnosis, the median RDW-CV was 19 (15-30)%, the median RDW-SD 56 (45-77) fl, the median HbF 37(1-76)%. Chromosome was performed, of which 13 cases had normal karyotype. 2 cases had tirsomy 8, 1 case had structural abnormality in chrosome 9. Next-generation sequencing results showed that 11(68.8%) cases carried PTPN11 mutations, 6 (37.5%) cases NF1 mutation, 5 (31.3%) KRAS mutation, 4 (25%) NRAS mutation, 1 case without one of the Ras pathway genes. 8 cases (50%) had more than two types of canonical JMML mutations, among them 6 cases (75%) had PTPN11 and NF1 co-mutation. 10 cases had secondary gene mutations, 3 (3/10) cases JAK3 mutation, 2 (2/10) SETBP1 mutation, 2 (2/10) SH2B3 mutation, 2(2/10) ASXL1 mutation, 2 (2/10) ARID1A mutation, 1 (1/10) SRSF2 mutation. The median treatment course was three cycles (range: 1-6), and the response rate was 68.8% (11/16) after one cycle and 81.8% (9/11) after three cycles. One case achieved complete remission (CR) after four courses of therapy. The WBC and monocyte counts were significantly decreased after treatment ($P<0.001$), and the spleen volume showed a decreasing tendency. Eleven patients received HSCT, 9 cases were implanted successfully and 2 cases failed, of which 1 case was relieved by secondary transplantation and 2 patients died of grade IV graft-versus-host disease (GVHD) after transplantation. The median follow-up time was 31 months. The 2-year progression-free survival rate was 75.0±10.8%. Conclusions:Demethylated drug in combination with low-dose chemotherapy could reduce JMML patients' tumor burden, improve the general condition, and obtain a clinical response rate of 81.8% after 3 cycles therapy. Therefore, such a combination regimen could be used as a therapeutic option for JMML before HSCT.

Disclosures No relevant conflicts of interest to declare.

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