

论著

## 抗CD20单抗在致敏受者造血干细胞移植中应用的实验研究

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**摘要** 目的: 寻找促进异基因造血干细胞在致敏受者植入的策略研究, 探讨抗CD20单抗在致敏受者造血干细胞移植的作用。方法: 分别于移植前第14 d及第7 d予BALB/c小鼠输注C57BL/6小鼠的脾细胞建立致敏模型。实验组于移植前第11 d经尾静脉输注抗CD20单抗(美罗华) 2 mg/mouse, 对照组于移植前第11 d予输注RPMI-1640培养液 0.2 mL/mouse。于第0 d(移植当天)取部分小鼠分离得血清及脾细胞, 并检测供者反应性抗体及CD19+B细胞; 部分小鼠予 [60Co] 致死量照射, 4 h后予1×10<sup>7</sup> C57BL/6小鼠骨髓细胞进行移植, 观察生存情况及血常规恢复情况。结果: 实验组与对照组血清细胞毒性指数分别为(37.00±3.46)%和(51.80±3.49)%, 差异显著(P<0.01); 2组的脾细胞CD19+B细胞百分比分别为(17.32±3.02)%和(34.26±2.87)%, 差异显著(P<0.01)。照射移植后2组受者均于14 d左右全部死亡, 生存中位数分别为第13 d及第11 d, Log-rank检验2组间的差别无显著(P>0.05)。濒死动物血常规结果示三系减少, 提示受者死于造血衰竭。结论: 抗CD20单抗能杀伤受者B细胞, 降低致敏程度, 但实验中该单抗并不能有效促进异基因造血干细胞在致敏受者的植入。

**关键词** [致敏受者](#) [抗CD20单抗](#) [造血干细胞移植](#)

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## Application of anti-CD20 antibody in hematopoietic stem cell transplantation for sensitized recipients

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### Abstract

<FONT face=Verdana>AIM: To find a strategy for enhancing engraftment of hematopoietic stem cell in sensitized recipients and to study the effects of anti-CD20 antibody in hematopoietic stem cell transplantation. METHODS: BALB/c mice were sensitized by transfusions of allogeneic spleen cells on 14 d and 7 d. Anti-CD20 antibody (2 mg/mouse) was intravenously injected into sensitized recipients on 11 d. The recipients were used as experimental group, while RPMI-1640 medium (0.2 mL/mouse) was used as control. The sera and splenocytes obtained from the recipients were tested for donor reactive antibody and CD19+ B cells on 0 d. In addition, the recipients were transplanted with 1×10<sup>7</sup> C57BL/6 bone marrow cells after lethal irradiation on 0 d. The survival rates were observed and blood counts were studied post transplantation. RESULTS: The cytotoxic index in the experimental group and control group were (37.00±3.46)% and (51.80±3.49)%, respectively, and the differences were significant (P<0.01). The percentages of CD19+ B cells in experimental group and control group were (17.32±3.02)% and (34.26±2.87)%, respectively, and the differences were significant (P<0.01). All the recipients in both experimental group and control group died about 14 d post transplantation. The median time was 13 d and 11 d in experimental group and control group, respectively, and no significant difference was found between these two groups (P>0.05). Moreover, a rapid disappearance was observed in the white blood counts, hemoglobin, and platelet of dying animals, indicating the animals died from hematopoietic failure. CONCLUSION: Anti-CD20 antibody is able to deplete B cells and reduce the level of antibody in sensitized recipients, but it can't enhance the engraftment of allogeneic hematopoietic stem cells in the sensitized recipients.</FONT>

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