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论著

伯氏疟原虫氯喹抗性株感染ICR小鼠脾脏树突状细胞成熟和B细胞活化

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摘要

目的 研究伯氏疟原虫氯喹抗性株(RC株)和氯喹敏感株(N株)感染鼠脾脏B细胞活化与树突状细胞(DC)的关系。 方法 分别用感染N株或RC株疟原虫的红细胞(iRBC)腹腔接种感染ICR小鼠(1×10^6个iRBC/只)。当小鼠原虫血症N株达50%～80%、 RC株达61.7%～68.4%时, 断颈处死取脾脏。 常规方法制作石蜡切片, HE染色或免疫组织化学染色, 进行组织学观察。 制作超薄切片, 透射电镜观察脾脏细胞的变化。制作冰冻切片进行免疫荧光观察。流式细胞仪分析比较B细胞和DC变化。 结果 RC株感染小鼠脾脏白髓增生明显, 抗B细胞的特异性表面分子CD45R/B220和CD19抗体同时表达阳性的B细胞在脾细胞中的百分比增加, 中、 小淋巴细胞数量增多, 在红髓内浆母细胞与成熟的浆细胞数量增多。而N株感染小鼠脾小体则以大、 小淋巴细胞为主, 生发中心不明显, 红髓可见大量的含疟原虫的红细胞、 小淋巴细胞, 而浆母细胞和其他发育期浆细胞则少见。 RC株感染小鼠脾脏内白细胞分化抗原11c(CD11c) 阳性的DC数量明显增多, 尤其动脉周围淋巴鞘T细胞区。并且这些DC表面主要组织相容性复合体Ⅱ (MHCⅡ) 类分子表达明显升高, 表明主要是成熟的DC增多。DC外形不规则, 胞质丰富, 电子密度高, 含发达的高尔基复合体和吞噬泡样结构。 结论 RC株感染小鼠脾脏成熟的DC 明显增加, 从而诱导B细胞的活化增殖。

关键词 伯氏疟原虫 氯喹抗性 脾脏 B细胞 树突状细胞 小鼠

分类号

Maturation of Dendritic Cells and Activation of B-lymphocytes in Spleens of ICR Mice Infected with Chloroquine-resistant *Plasmodium berghei*

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Abstract

Objective To investigate the relation between activation of B-cells and maturation of dendritic cells(DC) in the spleens of ICR mice infected with chloroquine-resistant(RC) or chloroquine-sensitive(N) strain of *Plasmodium berghei*. Methods Spleens were taken after the mice were infected with N or RC strains of *P. berghei* and attained certain degree of parasitemia. Changes of B-cells and DCs were examined by pathological method, immunohistochemistry and immunofluorescence methods, transmission electron microscopy (TEM) and flow cytometry technology. Results Proliferation of white pulps in the spleen of mice infected with RC strain was found as compared to that with N strain. The percentage of cluster of differentiation(CD) 45R/B220, CD19 cells increased in the spleen cells, number of medium and small lymphocytes increased in the germinal centers, the immature and mature plasma cells also increased in the red pulps of spleen in RC strain-infected mice. On the contrary, in the N strain-infected mice spleen, the white pulps were reduced and the red pulps were filled with parasite-infected red blood cells; less small lymphocytes, immature and mature plasma cells were observed in red pulps. The number of CD11c DCs increased, especially in the periarteriolar lymphoid sheath, T cell area; the expression of major histocompatibility complexⅡ(MHCⅡ) on DC was up-infected mice. TEM showed that the DCs in RC strain-infected mice spleens were more active than that in N strain-infected mice. Conclusion Infection of RC strain P. berghei increases mature DCs in the spleen, which induces the proliferation of B cells and immune response.

Key words *Plasmodium berghei* Chloroquine resistance Spleen B-cell Dendritic cell Mouse

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