

论著

艾滋病抗病毒治疗中外周血细胞病毒库的动态变化及其意义

陈霞¹, 郑煜煌², 加路², 何艳², 周华英², 谌资², 罗艳², 贺波², 贺梅², 姚运海²

1. 中南大学 湘雅医院检验科, 长沙 410008;
2. 中南大学 湘雅二医院感染科艾滋病研究室, 长沙 410011

摘要: 目的: 观察中国HIV-1感染者和AIDS病(HIV/AIDS)患者在两年高效抗反转录病毒治疗(highly active antiretroviral therapy, HAART)过程中, 外周血NK细胞、T淋巴细胞以及单核细胞3种HIV-1病毒储存库的动态变化及其与治疗效果的关系。方法: 40例初次接受HAART的HIV/AIDS患者被纳入本研究并随访2年。在启动治疗0, 6, 12, 18, 24个月后, 检测其外周血HIV-1 RNA病毒载量, CD4⁺T细胞数量, NK细胞、单核细胞和T淋巴细胞内的HIV-1 DNA水平, 对数据进行统计学处理及相关性分析。结果: 40例随访患者随着HAART的进行, 患者的CD4⁺T细胞计数水平逐步上升, 血清HIV-1 RNA水平逐步下降; 同时3种细胞(外周血T淋巴细胞、NK细胞)中的HIV-1 DNA载量也在逐步下降, 与血清RNA载量的下降一致, 3种细胞中的平均HIV-1 DNA载量与外周血HIV RNA水平之间呈正相关($P < 0.05$)。外周血T淋巴细胞、NK细胞中HIV-1 DNA水平在治疗基线及治疗后均与外周血CD4⁺T细胞计数均呈负相关($P < 0.05$); 而单核细胞内HIV-1 DNA在治疗基线与CD4⁺T细胞计数无相关性($P > 0.05$)。结论: 中国HIV-1感染者外周血中NK细胞、T淋巴细胞和单核细胞均是HIV-1的病毒储存库之一。T淋巴细胞可能是HIV病毒最主要的细胞储存库。HIV-1前病毒DNA的检测对于抗病毒治疗疗效的判断以及病情进展的预测都有着重要的意义。

关键词: 人类免疫缺陷病毒 高效抗反转录病毒 NK细胞 T淋巴细胞 单核细胞 HIV-1前病毒DNA

Dynamic changes of cellular HIV-1 DNA quantification during highly active antiretroviral therapy in Chinese HIV infected individuals

CHEN Xia¹, ZHENG Yuhuang², DIALO Mamadou², HE Yan², ZHOU Huaying², CHEN Zi², LUO Yan², HE Bo², HE Mei², YAO Yunhai²

1. Department of Clinical Laboratory, Xiangya Hospital, Central South University, Changsha 410008;
2. AIDS Research Laboratory, Department of Infectious Diseases, Second Xiangya Hospital, Central South University, Changsha 410011, China

Abstract: Objective: To observe the dynamic changes of 3 types of viral reservoir cells (NK cells, T lymphocytes and monocytes), and its relationship with treatment effect in Chinese HIV-1 infected patients receiving highly active antiretroviral treatment (HAART) for 2 years. Methods: A total of 40 chronic HIV-1-infected adults who initiated HAART were enrolled in this study and followed up for 2 years. Peripheral whole blood was obtained from each patient at baseline (0 month), 6, 12, 18 and 24 months. Real-time fluorescent quantitative PCR was used to detect the HIV-1 RNA in the plasma and HIV-1 DNA in NK cells, T lymphocytes and monocytes. All the data were statistically analyzed. Results: CD4 count increased with the decrease of the viral load during HAART. After HAART initiation, HIV-1 DNA showed a significant decrease in NK cells, T lymphocytes and monocytes. The HIV-1 DNA from T lymphocytes, NK cells and monocytes correlated positively with the HIV-1 RNA ($P < 0.05$) while NK cells and T lymphocytes correlated negatively with CD4⁺T cell count. However we did not find significant correlation between CD4⁺T cell count and HIV-1 DNA in monocytes at the baseline of HAART.

Conclusion: This study found that NK cell was an important HIV cellular reservoir besides T lymphocytes and monocytes. T lymphocytes may be the main long lasting HIV reservoir. HIV-1 proviral DNA may play an important role in the efficacy of treatment and monitoring the disease progression.

Keywords: human immunodeficiency virus highly active antiretroviral therapy NK cell T lymphocyte monocyte HIV-1 proviral DNA

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通讯作者: 郑煜煌, Email: yhzyhz2002@sina.com

作者简介: 陈霞, 博士, 医师, 主要从事HIV 病毒感染方面的研究。

作者Email: yhzyhz2002@sina.com

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