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ORIGINAL ARTICLE

Research on AIDS patients' survival time after highly active antiretroviral therapy, treatment effect and treatment modes

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KEYWORDS

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Abstract To fully define clinical efficacy of highly active antiretroviral therapy for AIDS, analyze patients' survival time and treatment mode after receiving treatment, and provide scientific theory to guide improvement of antiviral therapy, this paper selected 3100 cases of patients diagnosed with AIDS during April 2006 and April 2014 as object of this study. All patients were treated with highly active antiretroviral therapy. The main analysis contents of this study include CD4 + T lymphocyte count, viral load changes, incidence of opportunistic infections, specific cause of death and the like. The results show that patients' CD4 + T lymphocyte levels are significantly increased 3, 18, and 24 months after treatment, difference between the situation after and before receiving treatment, $P < 0.05$, with statistically significant difference. Analyzed from effective inhibition of virus, effective inhibition rate is 72.58.0% (2250/3100). Main causes of death in patients is usually respiratory failure. It thus can be concluded that highly active antiretroviral therapy for AIDS is with good clinical effect, which can effectively improve survival time of patients. So it enjoys application value of being widely used in clinical treatment of AIDS.

1. Introduction

The AIDS is a infectious disease of great danger, which is caused by HIV virus. HIV is a virus that can attack the body's immune system (Figs. 1–3), which takes T lymphocytes, the most important part in the body's immune system, as the main target, greatly destroy the cells, resulting in loss of human immune function. Thus, the body is susceptible to infection with various diseases, possibly leading to malignant tumors. The mortality is relatively high.

Average incubation period of HIV in the human body is 8–9 years. Before AIDS, patients can live and work for many years without any symptoms. Once AIDS is developed, patients will have a variety of clinical manifestations. Early symptoms are like common cold, flu, with general fatigue, weakness, loss of appetite, fever, etc. As the disease worsens,

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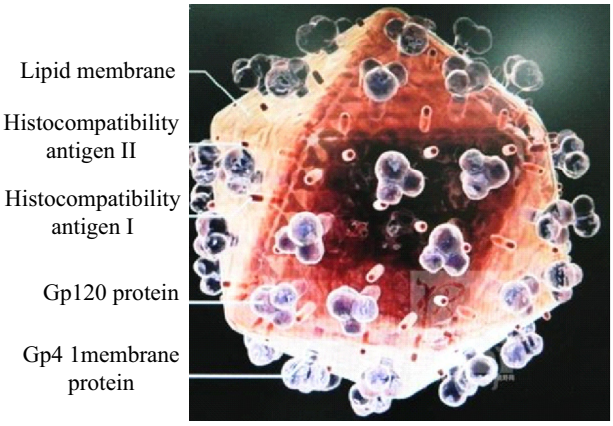

Figure 1 HIV virus structure.

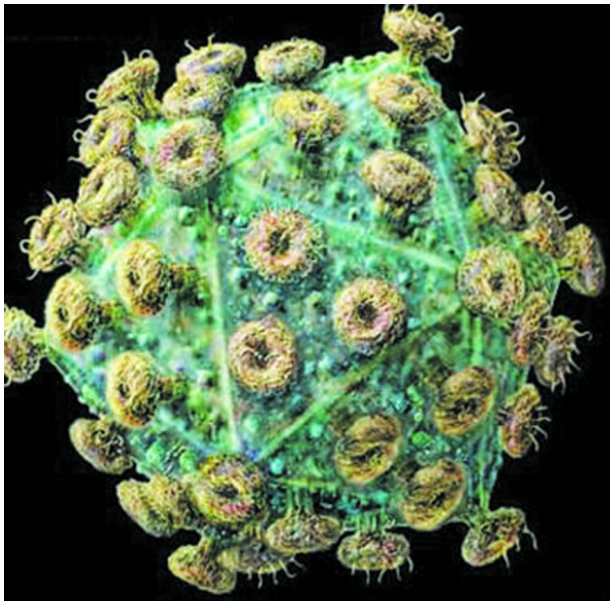

Figure 2 HIV virus form.

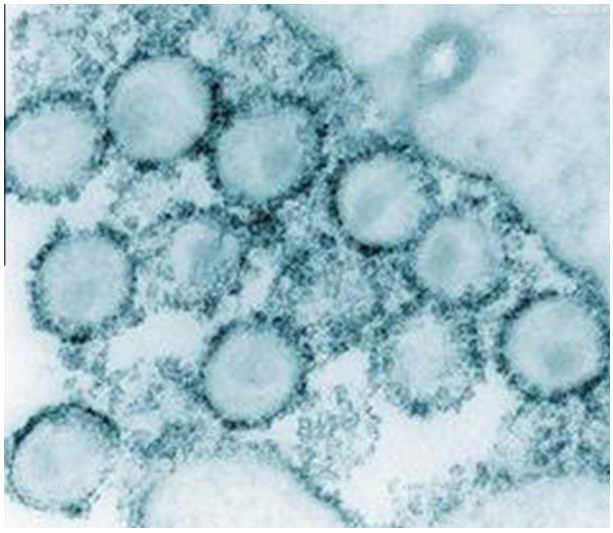

Figure 3 HIV virus slice.

symptoms increase in number, such as candida albican infection of skin and mucous membrane, appearance of herpes simplex, herpes zoster, purple plague, blood blisters, and congestion spots; later, visceral organs are gradually violated, which leads to unexplained persistent fever up to 3–4 months; also cough, shortness of breath, difficulty breathing, persistent diarrhea, hemafecia, hepatosplenomegaly, malignancy and the like will occur. Clinical symptoms are complex and changeful, but each patient doesn't have all above symptoms. In case of violation of the lung, difficulty in breathing, chest pain, and cough will occur; gastrointestinal violation can cause persistent diarrhea, abdominal pain, weight loss and weakness; violations of the nervous system and cardiovascular system can also be caused. As AIDS will cause long-term consumption of patients' body organ function, most patients show systemic organ failure at death. Many medical researchers all over the world have done a lot of research in treatment of AIDS, but so far specific drug that can cure AIDS has not yet been developed, and also, there exists no effective vaccines for prevention. Due to its high risk and difficulty to cure, AIDS is listed as one of communicable diseases of frontier health surveillance. In recent years, highly active antiretroviral treatment has been found in clinics to have a more favorable therapeutic effect. Combination of several (usually three or four) antiretroviral drugs is known as highly active antiretroviral therapy (HAART). However, due to complexity of drug combinations and administration methods, as well as serious possible side effects, moreover, drug resistance of the virus for the drugs, clinical studies suggest that risk and benefits of this type of iatrotechnique for patients without symptoms should be analyzed to choose therapeutic method, as antiretroviral drugs of different types act on different stages of HIV life cycle (Yin et al., 2015; Gulisaina et al., 2015; Liang, 2015). The paper conducts sampling study of 3000 cases of AIDS patients, with specific circumstances shown below.

2. Materials and methods

2.1. General information

The 3100 cases are randomly selected from AIDS patients treated in 2011 for investigation and analysis. All patients were confirmed as anti-HIV positive, with minimum follow-up of six months and maximum follow-up of 10 years. Among them, there are 1818 cases of male, 1282 cases of female; patients were aged 10–71 years, with average age at (38.9 ± 6.9) years; transmission routes include intravenous drug addiction, sexual transmission, blood transfusion transmission, single plasma transmission, and unknown routes.

2.2. Treatment methods

In this study, used highly active antiretroviral therapy drugs are provided free of charge, including nucleoside reverse transcriptase inhibitor, non-nucleoside reverse transcriptase inhibitor and protease inhibitor. Nucleoside reverse transcriptase inhibitors include zidovudine (AZT, ZDV), lamivudine (3TC), stavudine (D4T); non-nucleoside reverse transcriptase inhibitors include nevirapine (NVP) and efavirenz (EFV), and protease inhibitor is kaletra (LVP). The pharmaceutical compositions selected by patients conform to state regulations: