

Opportunistic and Coinfections In HIV Positive Patients at The Clinic Of Infectious Diseases, “St.George” University Hospital, Plovdiv

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ABSTRACT:

Objective: to be determined the type and frequency of the opportunistic and coinfections in HIV positive patients, as well as their connection with the degree of the immune deficiency.

Methods: the study included 170 patients with verified HIV infection- 146 men and 24 women. They were separated in 3 groups: stage A- 16; stage B- 104; stage C- 50. The used methods are clinical observation, laboratory and microbiological analysis. In all patients HIV was confirmed by present diagnostic methods (ELISA, Western-Blot, PCR, flow cytometry).

Results: The opportunistic infections in HIV positive patients were: kandidiasis - 32 (4- stage A; 8- stage B; 20- stage C); pneumocystis pneumonia- 14 patients (stage C); tuberculosis – 8 (1 – stage B; 7- stage C); HHV8 – 2 patients- both of them in stage C; 1 patient with salmonella sepsis; 1 patient with toxoplasma meningitis.

Coinfections with hepatotropic viruses: 110 patients (64.7%) infected with hepatitis C ; 23 patients infected with hepatitis B; 15 patients were positive for both hepatitis B and C. Intravenous drug users in these groups were 68%; 65.21% and 80% respectively.

Conclusions: The most common opportunistic infections are kandidiasis (18.8%) and pneumocystis pneumonia (8.2%). The most common coinfection is hepatitis C. Coinfections with hepatotropic viruses correlate with the mechanism of transmission. The intravenous drug users are at very high risk.

Keywords—HIV/AIDS, opportunistic infections, coinfections.

I. INTRODUCTION

About 42 million people are infected with HIV worldwide. Each year the newly infected add up to approximately 1 million. The cases of HIV/AIDS in Europe continue to increase every year and the disease acquires more and more importance for public health. During 2010 the newly registered cases in Europe were more than 27 000 which presents an incidence rate of 5.7/100 000 (1). For 2009 the registered cases in Europe were 53 427 – they were reported from 49 of all 53 countries (2). During 2008 the new cases of HIV/AIDS in Europe were 51 600 (3) which is an increase in comparison with 2007 when they were 48 892 (4). In Bulgaria the total number of HIV positive population according to the ministry of health till the end of August 2012 was more than 1500. Four hundred of them are already diagnosed with AIDS.

Emerging opportunistic infections (and their treatment) in patients with HIV is of major importance for the patients' clinical condition and the outcome of the disease (5, 6). The **aim** of the study is to be determined the type and frequency of the opportunistic infections and the coinfections in HIV positive patients, as well as their relation to the degree of the immune deficiency.

II. MATERIALS AND METHODS

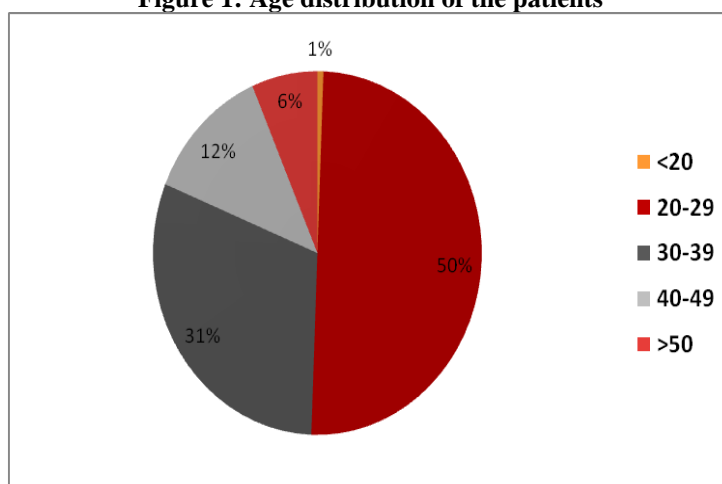
The study includes 170 patients with verified HIV infection - 146 men and 24 women. They are separated in 3 groups - stage A - 16; stage B - 104; stage C - 50. The methods used are clinical observation, laboratory and microbiological analysis. In all patients HIV was confirmed by contemporary diagnostic methods (ELISA, Western-Blot, PCR, flow cytometry).

According to the mechanism of infection the patients are separated in 3 groups: intravenous drug users - 51%; heterosexual intercourse - 40 %; men, who have sex with men (MSM) - 9 %.

III. RESULTS

The age distribution of the patients is shown on Figure 1. Most of them (50%) are older than 50 years.

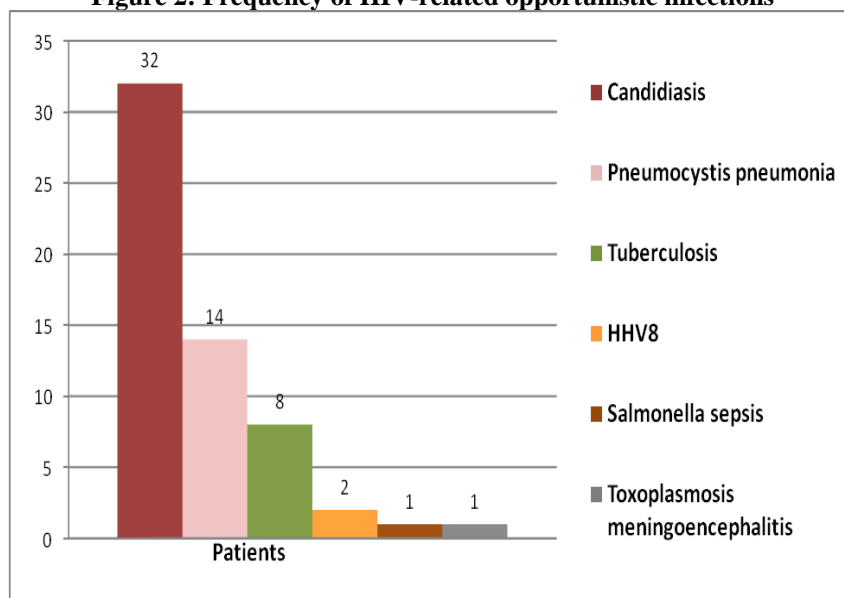
Figure 1: Age distribution of the patients



Before the widespread use of potent combination antiretroviral therapy (cART), opportunistic infections were the principle cause of morbidity and mortality in this population. The widespread use of cART starting in the mid-1990s has had the most profound influence on reducing opportunistic-related mortality as well as improving the quality of life in HIV-infected persons. Despite the availability of ART in industrialized countries, opportunistic infections continue to cause considerable morbidity and mortality because many patients are unaware of their HIV infection, certain patients are aware of their HIV infection, but do not undergo ART because of psychosocial or economic factors; certain patients are prescribed ART, but fail to attain adequate virologic and immunologic response because of factors related to adherence, pharmacokinetics, or unexplained biologic factors.

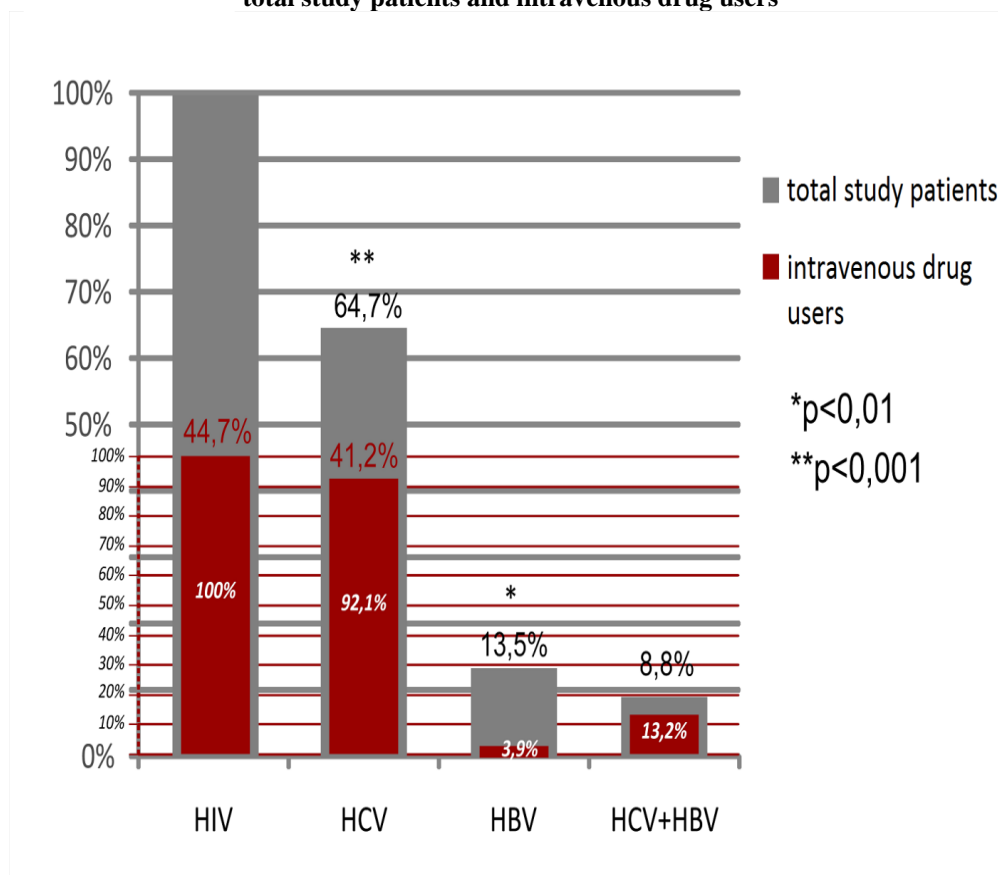
The most common opportunistic infection among the HIV-positive population at the clinic is candidiasis - 32 patients (4 - stage A, 8 - stage B, 20 - stage C); pneumocystic pneumonia - 14 patients (stage C); tuberculosis - 8 patients (1-stage B, 7 - stage C); HHV8 - Sarcoma Kaposi - 2 patients in stage C, 1 patient with salmonellosis and 1 patient with toxoplasmic meningitis - both in stage C (**Figure 2**). The vast majority of the patients have more than one opportunistic infection, which complicates the therapeutic effect.

Figure 2: Frequency of HIV-related opportunistic infections



According to the coinfections with hepatotropic viruses, HIV+ patients are separated in three groups - HCV+; HBV+; HCV+HBV (**Figure 3**). The results: 92.1 % of the intravenous drug users group are HCV+ compared to 64.7% HCV+ patients among the total study patients: there is statistical significance between the groups by confidence interval **95%**. The same result is present by the HBV+ group. About the HCV+HBV group the results are not statistically significant.

Figure 3: Coinfections with hepatotropic viruses among HIV-positive patients, total study patients and intravenous drug users



IV. CONCLUSIONS

The most common opportunistic infections in our HIV-positive patients were candidiasis (18.8%), pneumocystis pneumonia (8.2%) and tuberculosis (4.7%). The most common coinfection was hepatitis C. Coinfections with hepatotropic viruses correlate with the mechanism of transmission. The intravenous drug users are at very high risk.

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