NEUROPSYCHIATRIC DETERMINATION ASSOCIATED WITH HIV-1 INFECTION

Abstract of the PhD thesis

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Abstract summary

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**KEYWORDS:** HIV, neuroAIDS, neuropsychiatric HIV associated conditions
INTRODUCTION

The importance of neuropsychiatric conditions associated with HIV infection lies in the increased incidence, difficulties of diagnosis, the severity of some conditions, the limited therapeutic opportunities and the necessity for secondary long-term prophylaxis. Introducing highly active antiretroviral therapy (HAART) decreased the incidence of neurological disorders caused by human immunodeficiency virus (HIV) itself and reduced the number of opportunistic infections. Today, due to the patients increasing survival, damages of chronic encephalitis are currently found, expressed through moderate cognitive and motor impairments. Due to the genetic variability HIV subtypes demonstrates different degrees of virulence. Most HIV-positive patients monitored in Romania are infected with F1 subtype. We do not know much about its virulence and impact on the central nervous system. This work is a logical consequence of the personal work done since 2000 as a physician employee of Infectious Diseases Hospital from Craiova.

The GENERAL PART (40 pages) describes the neuropsychiatric and behavioral conditions associated with HIV infections, based on current knowledges (397 references).

SPECIAL PART - OBJECTIVES

1. To determine the place and importance of neuropsychiatric and behavioral conditions associated with HIV infections among patients monitored by the Craiova Regional Center

2. To clinical and evolutive describe the spectrum of neuropsychiatric and behavioral conditions

3. To characterize from clinical, immunological and virological aspects the HIV infected patients diagnosed with neuropsychiatric disorders

4. To search for asymptomatic neurocognitive disorders among targeted HIV infected individuals

5. To evaluate the impact of neuropsychiatric conditions on the quality of life of targeted subjects

6. To detect criteria which might be useful to the clinicians for predicting and early-diagnosing neurological conditions in HIV-infected groups

METHODS – GENERAL CONSIDERATION

The study undertaken in the doctoral program was conducted between January 2005 and December 2008 and it is part retrospective (covering the period January 1990 - December 2004) and part prospectively from January 2005. All cases have been monitored by the Craiova Regional Center coordinated by professor Augustin Cupşa. Data from 896 patients (from Oltenia region) have been revised; subgroups were composed according to the studied themes. The following data have been recorded into an Excel database:

- personal data: first name / name, age, gender, residence
- Epidemiological data regarding HIV infection: date of HIV diagnosis, the probable year of infection, the period of time under monitoring, the probable way of infection, deceases

- Clinical, immunological and virological data

- Data regarding ART

Different statistical programme have been used for the purpose of this thesis (Data Analysis module – Microsoft Excel, EPI6. MedCalc 10, etc)

MAIN RESULTS

Nearly 40% of seropositive patients studied are or have been diagnosed with neuropsychiatric and behavioral distress. Percentage exceeds 50% when taking into account only the patients diagnosed with AIDS. Almost 10% of presentations to the doctor for medical advice or hospitalization are due to neuropsychiatric and behavioral conditions. Percentage reaches 12.54% at the stage of AIDS. Neurological suffering ranks third among diseases signaling the presence of HIV infection after pulmonary TB and wasting syndrome. The temporal trend of these sufferings is increasing. The number of deaths recorded in HIV-positive patients diagnosed with neuropsychiatric and behavioral distress is important (almost 25% of all deaths). Neurological conditions are mainly associated with the C3 stage of HIV infection. From a total of 1901 neuropsychiatric and behavioral events recorded over 18 years, a number of 502 are neurological, while 1399 are psychiatric and behavioral disorders, which shows the predominance of the latter in the spectrum of events studied. From the total neurological afflictions, the majority (87%) are the determination of brain tissue and meningeal space, followed by cranial or peripheral nerve afflictions, while a minority of cases recorded medular determinations. HAND and meningitis dominates among neurological conditions, while mood disorders, coping, emotional and behavioral disorders, as well as depression and anxiety are frequently seen in our target group. Seropositive patients diagnosed with neurological conditions are characterized as follows: less monitoring duration (suggesting late detection of HIV infection), clinical and immuno-virological decay (greater number of HIV associated clinical events, frequent clinical classification in C stage, advanced immunosuppression - common classification in immunological category 3, higher HIV viral load), greater number of regimens, but with shorter duration of ART use and a greater number of drugs contained in their regimens, suggesting that this subgroup of patients did not show good adhesion to treatment. Compared with those with neurological determinations, the subgroup of HIV infected patients diagnosed with psychiatric and behavioral disorders is thus characterized: long monitoring a clinical status, better immunological and virological features (fewer clinical events HIV associated, common clinical classification in B category, common classification in immunological category 2, lower HIV viral load), more schemes compared with the control group, but with fewer numbers of drug per regimen and a longer duration of ART use. The presence of headache, fever and a more pronounce proteinorachia are associated with bacillary meningitis; cryptococcal meningitis usually occurs in a context marked immunosuppression Less than 79 CD4 lymphocytes / mm³, and proteinorahia less than 67 mg%. Differentiate cryptococcal from bacillary meningitis. Hospitalization is longer in bacillary meningitis, while recurrences are more frequent in fungal meningitis. The age of seropositive patients diagnosed with bacillary meningitis is significantly less than those with normal defense, but this should be interpreted in the context of profound immunosuppression secondary to HIV infection. WBC in peripheral blood and CSF, as well as the level of proteinorachia are significantly lower in people infected with HIV, reflecting a low intensity of
inflammatory reaction. Regarding evolution bacillary meningitis there was not statistically significant differences between HIV-positive patients, respectively uninfected subjects. Age (the only differentiating factor with statistical significance) over 29 differentiate the group of patients with, respectively without HIV associated peripheral neuropathy (sensitivity 50%, specificity 80%). Adult patients with sexually transmitted HIV, are more numerous in the group of patients diagnosed with peripheral neuropathy. 4. The individual arguments can be made to involve d-drug regimens, anti-bacillary treatment or involvement of CMV in the development peripheral neuropathy. Results of HIV Dementia Scale test, in conjunction with analysis of clinical, immunological, virological and therapeutic features can be a useful indicator for further neuropsychological investigation in order to early-detect HAND. A percentage of 18.88% of patients without clinically evident neuropsychiatric symptoms have subnormal test scores when assessing the cognitive-motor functions. Most of the detected disorders are most likely to be classified as ANI or MND, respectively; only one patient (1.1%) was detected with suggestive HAD score. Quality of life of HIV-positive studied patients (measured with MOS-HIV questionnaire) diagnosed with psychiatric and behavioral disorders exceeds that of patients in the control group, while the quality of life of patients infected with HIV and detected with various neurological suffering is under the control group, however without reaching the threshold for statistical significance (probably due to the small number of cases studied). There is a statistically significant difference between the quality of life of patients diagnosed with psychiatric and behavioral disorders and those with neurological sufferings. Less than 178 CD4 cells/mm³, more than 20725 HIV-RNA copies/ml, less than 40,6 months of ART, as well as less than 23,5 months of ART/regimen predict the occurrence of neurological sufferings in HIV infected individuals from the studied group.

REFERENCES contain 397 items.
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