HIV infected patients in a District Hospital – retrospective analysis

Joana Sá*, Mário Parreira**, Cristina Lobato***, Paula Custódio****, José Poças*****

Abstract

The authors present a retrospective analysis of HIV infected patients treated in an Internal Medicine ward from January 1992 to June 1995, in a District Hospital. The following parameters were assessed: number of admissions per patient, length of hospital stay, opportunistic complications, final outcome: medical counseling on discharge and distribution according to gender, age, ethnic background, infectious virus, risk group and staging.

From the results, the following can be highlighted: 61 patients were admitted, with a total of 134 admissions: 20 in 1992, 35 in 1993, 60 in 1994 and 19 during the first semester of 1995. 57% of patients were drug addicts and the most frequent opportunistic infections were tuberculosis. Among the 202 opportunistic complications observed, we could reach an accurate diagnosis in 47.6% of the cases, the average length of hospital stay was 15.8 days. Mortality was 10% and 94% of patients were sent to the outpatient clinic of Infectious Diseases. The authors tried to match the results with the social and economic backgrounds, comparing them with other national casuistry.

The authors' conclusion is that the HIV infection is an ever more important reason for admission, even in District Hospitals and in the Internal Medicine wards.

Keywords: HIV, Internal Medicine, district hospital.

Introduction

Since the HIV/AIDS pandemics was described for the first time in United States of America by the CDC, and up to the 30th June 95, the WHO has received reports from all over the world of 1.169.811 cases of AIDS, and it is estimated in 18.5 million the number of adults and 1.5 million the children infected with HIV since the end of the 70ties to the beginning of the 80ties. [1] Accumulated data until the 30 September 95, indicated 154,624 AIDS cases in the European Region of the World Health Organization, [2] being registered in Portugal until the 31st December 95, according to the National Committee against AIDS, 2919 cases. [3]

The first case described in Portugal was diagnosed in 1983 in the Medicine II Service of Santa Maria Hospital. Since then, the growing increase of cases led that the initial referral of patients with HIV infection to Infectious Diseases Service would also go to the Internal Medicine Services as it happens all over the world. [5] Setubal district is on the third place in absolute number of AIDS cases declared in our country (after Lisbon and Porto). [3] However, in terms of prevalence an epidemiologic score rather more correct will be probably near the first place. Sao Bernardo Hospital in Setubal serves around 300,000 inhabitants, with a distribution in six counties, in an approximate area of 4.386 km². It includes two Internal Medicine services, being Medicine II, in the study period, the most representative in terms of HIV infected patients, mainly because in this service are the most vocational Internists for such specialty and with more experience in this hospital, being also included here an Infectious Diseases appointment, operating since 1992 and a day hospital since 1993.

As such and following studies previously made in our country in patients admitted for HIV infections in Internal Medicine services, [6,7,8] we made a retrospective assessment, the first in a Portuguese District Hospital, well justified in the context already mentioned.

Material and methods

The retrospective analysis carried out covers patients with HIV infection, admitted in the Medicine II Service of Sao Bernardo Hospital, for a period of 42 months (1st January 1992 to the 30th June 1995).

The HIV infection diagnosis was made simulta-

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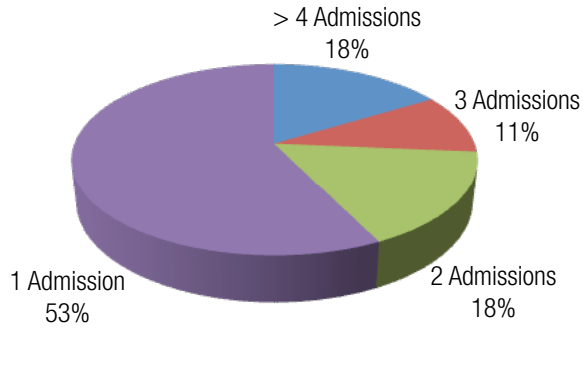
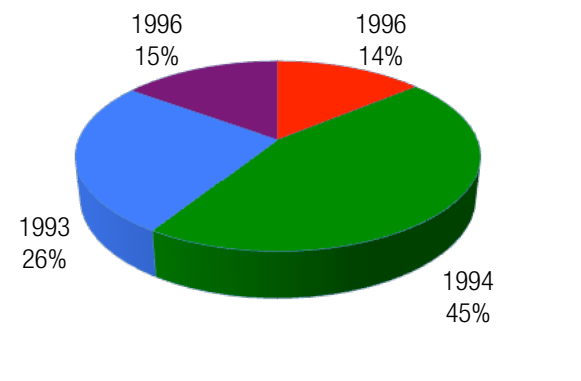


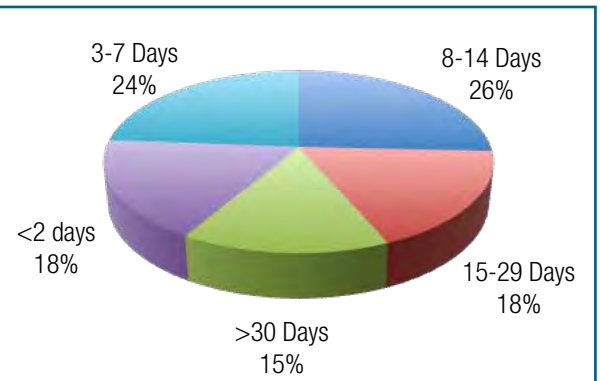
HIV infection – number of admissions.

FIG. 1



HIV infection – admission year.

FIG. 2



HIV infection – period of hospital stay.

FIG. 3

neously by Elisa and Western Blot methods. CD4 lymphocytes determination was carried out by flow cytometry, firstly in the Immunology Department of the FCML and since the end of 1994 in the Immuno--Allergology Laboratory of Setubal Hospital. Reactivity tests for the skin were the Monotest and Mérieux Multitest.

Opportunistic complications both major and minor were evaluated, whether they were AIDS criteria, according to the CDC – 93 classification.[9]

It was not assessed the results statistically significance, due to the retrospective nature of the work to the reduced number of patients included and because we understood that from this kind of analysis would not be drawing conclusions which were significant enough.

The following parameters were assessed: number of patients and admissions; year and period of the hospital stay; distribution by gender, ethnic background, age, infecting virus type, risk group; staging of HIV infection, according to the number of CD 4/mm3, Walter Reed Score[10] and Karnofsky scale;[11] reason for admission; opportunistic complications: type, number and diagnosis methods; final outcome; post-discharge guidance.

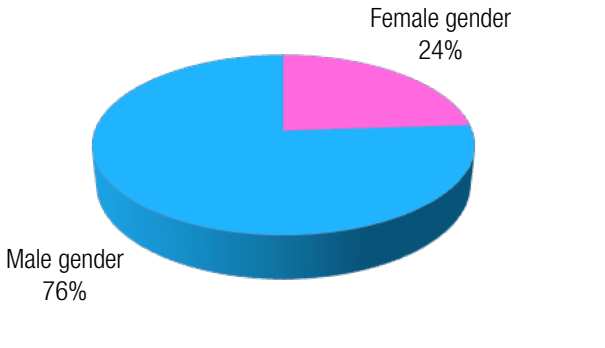
Results

61 patients were admitted, with a 134 admissions distribution being the average admission per patient of 2.2 (thresholds: 1 – 9). Patients were evaluated according to the number of admissions: 1, 2, 3 and 4 and were found respectively 32 (53%), 11 (18%), 7 (11%), and 11 (18%) patients (*Fig. 1*).

Regarding the admission year, it was observed an increased number of admissions on the quoted periods: 20 in 1992 (15%), 35 in 1993 (26%), 60 in 1994 (45%) and 19 in the first half of 1995 (14%) (*Fig. 2*). The average delay was 15.8 days (thresholds: 1– 107 days) and the hospital stay of two days in 23 patients (18%), from 3 – 7 days in 31 patients (24%), from 8 to 14 days in 34 patients (26%), from 15 to 29 days in 23 patients (18%) and 30 days in 30 patients (26%) (*Fig. 3*).

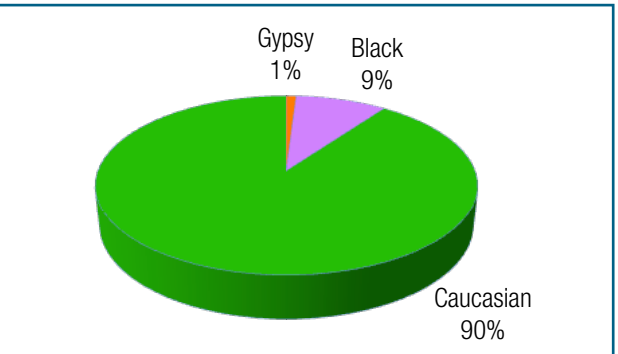
102 patients were accounted for with HIV infection - male gender (76%) and 32 female gender (24%) (*Fig. 4*), being 120 Caucasians (90%) 12 Black (9%) and 2 Gypsy ethnic background (1%) (*Fig. 5*).

Evaluating by the age scale, the most prevalent is the decade from the 30 to 39 years of age (46%),



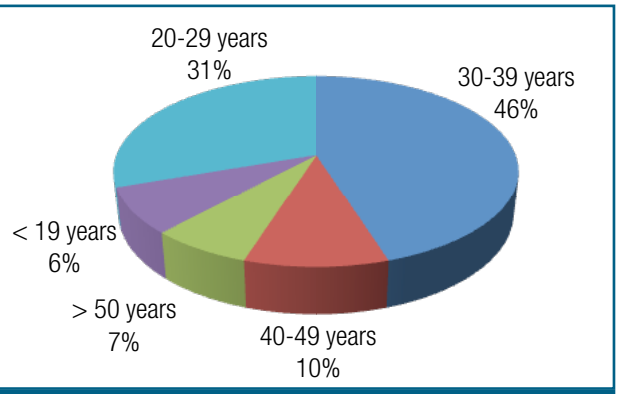
HIV infection – gender.

FIG. 4



HIV infection – ethnic background.

FIG. 5



HIV infection – age.

FIG. 6

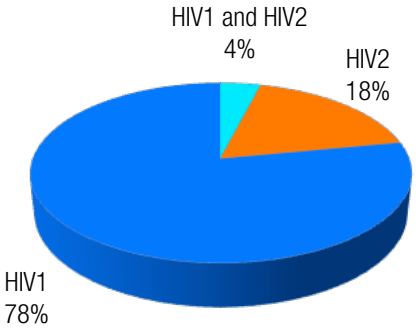
contributing together with the 20s to 29s to 77% of the total number of patients. The average age was 32.7 years old, ranging from 18 to 66 years of age (*Fig. 6*). From the 134 patients admitted, 117 were infected by HIV type I (87%), 12 by type 2 (9%) and 5 by type 1 and 2 (4%) confirmed by Western Blot (*Fig. 7*).

The predominant risk group were drug addicts (57%), and in decreasing order were followed by the homo/bisexual (22%), heterosexuals (17%), hemophiliacs (2%) and patients subject to blood transfusion (1%) (*Fig. 8*). If looking into the HIV2 population, 50% were heterosexual, 42% drug addicts and 8% were hemophiliacs.

In a study of lymphocytic subpopulations, we found an average of 223 CD4/mm3, with a minimum and maximum threshold respectively of zero and 1925. In 27 patients, the CD4 number was not known (20%): being in the reminder 99 in 48%, from 100 to 199 in 12%, from 200 to 499 in 31% and 500 in 9% of patients (*Fig. 9*). Regarding the analysis of patients according to the Walter Reed scale, the following distribution was observed: WR0 – 0%, WR1 – 3%, WR2 – 5%, WR3 – 0%, WR4 – 6%, WR5 – 25% and WR6 – 61% (*Fig. 10*). When the evaluation was based on Karnofsky scale (0 – 100), it was seen that 30% of patients were above 80 years old, 46% between 60 and 70, 28% between 40 and 50 and 13% below 30, being the average found in the 60 (thresholds: 20 – 90) (*Fig. 11*).

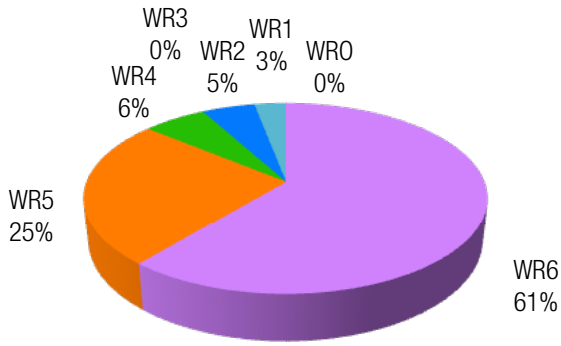
The reason for admission (*Fig. 12*) in 60% of cases was due to signs and/or symptoms of several organs and systems, and should be highlighted in decreasing order: gastroenterology, pulmonary, neurologic and ophthalmological. Such manifestations were followed in 87.5% of cases by fever. We found 13% of admissions due to organ failure (namely respiratory, hepatic and renal), 10% by isolated febrile syndrome, 9% to carry out exams (liver biopsy, myelography, bone biopsy, bronchoscopy and lumbar puncture), 7% transferred from other services or hospitals and 2% to start therapy, in the sequence of previously made diagnoses in the outpatients Infectious Diseases clinic, highlighting namely chemotherapy for cutaneous Kaposi sarcoma, ganciclovir for CMV infection and tuberculostatic drugs.

Regarding opportunistic complications (*Fig. 13*), we found 202 episodes, with an average per patient of 1.5 and with thresholds from 0 to 5. Pulmonary tuberculosis and pneumonia by *Pneumocystis carinii*



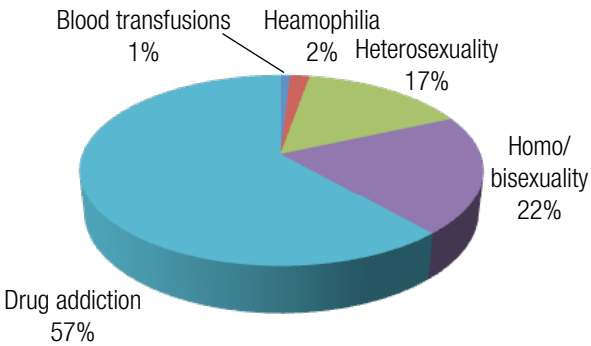
HIV infection – virus type.

FIG. 7



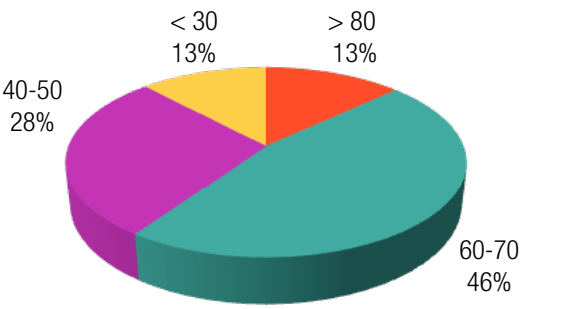
HIV infection – staging walter reed.

FIG. 10



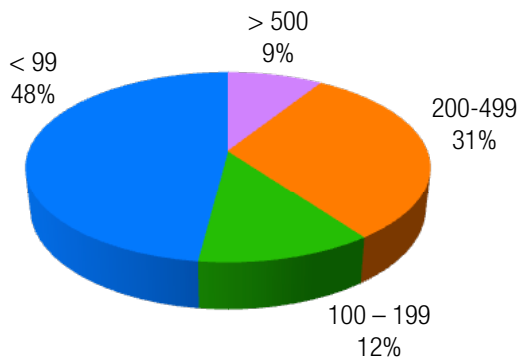
HIV infection – risk group.

FIG. 8



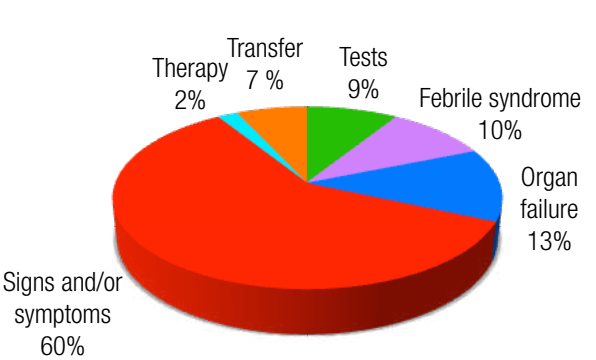
HIV infection – staging: karnofsky.

FIG. 11



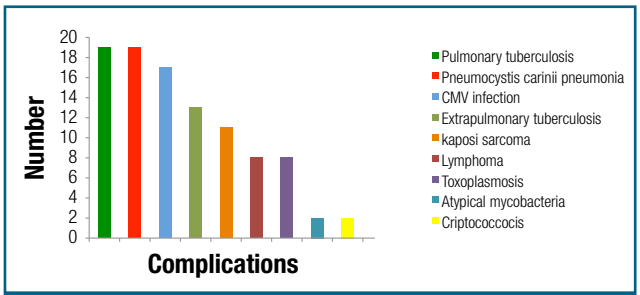
HIV infection – staging CD4/mm³.

FIG. 9



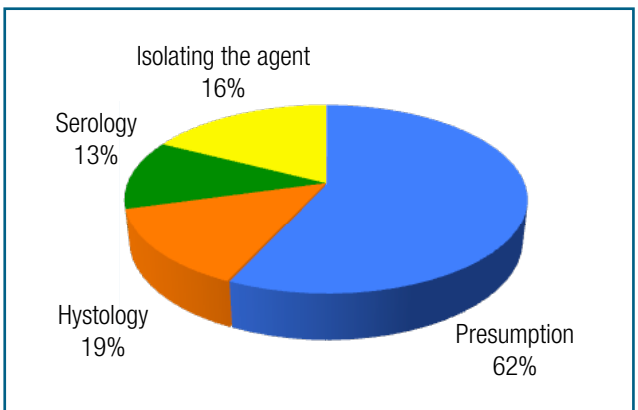
HIV infection – reason for admission.

FIG. 12



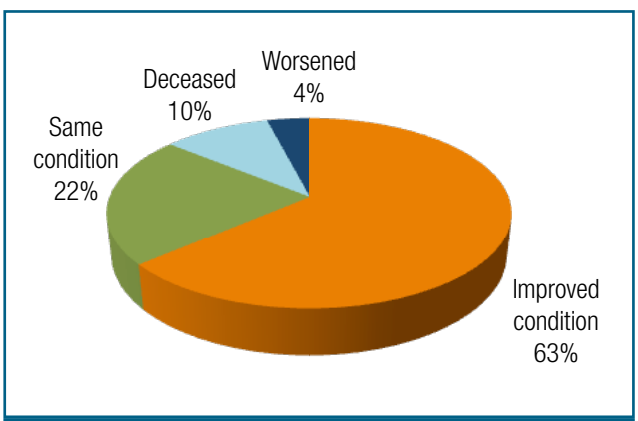
HIV infection – major opportunistic complications.

FIG. 13



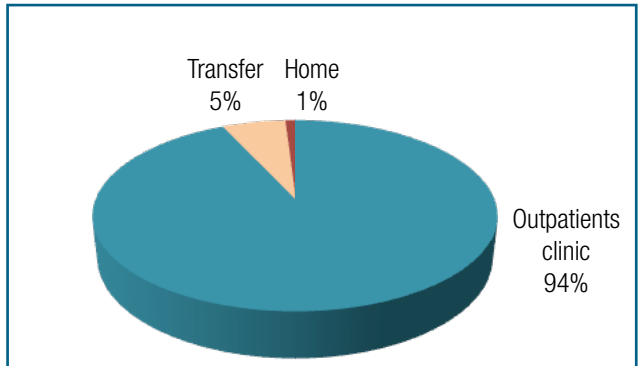
Opportunistic infections – diagnostic method.

FIG. 14



HIV infection – final outcome.

FIG. 15



HIV infection – guidance after discharge.

FIG. 16

were the more frequent major opportunistic infections, registering a number also important of CMV infections (retinitis, colitis, hepatitis, neuropathies and pneumonia), extrapulmonary tuberculosis (hepatic, meningeal, ganglionary and intestinal), Kaposi sarcoma (cutaneous, bronchial, pulmonary and tonsil), lymphoma (CNS, gastric and mammary) CNS toxoplasmosis, cryptosporidiosis, atypical mycobacteriosis and cerebral cryptococcosis.

As mentioned on *Fig. 14*, it was seen a high number of presumption diagnosis (52%), being oral candidiasis, pneumonia by *Pneumocystis carinii* and CNS toxoplasmosis the main responsible. The definite diagnosis was reached through histology in 19% of cases, isolating the agent in 50% and serology in 13%.

Among the 134 admissions, there were 17 cases of drop out (12.7%), being the final result 63% of improved patients and recording 10% of deaths (*Fig. 15*). We point out that 94% of patients were referred after being discharged, to the Infectious Diseases Outpatients Clinic in our hospital, 5% were transferred and 1% went home. Simultaneously, 22 tuberculosis cases were referred to the Tuberculosis Service and Respiratory Diseases Department (DSTDR) (16.7%) 43 cases to the Drug Addiction Support Center (CAT) (35.8%) and 11 cases for the Day Hospital (9.2%) (*Fig. 16*).

Discussion

HIV/AIDS pandemic is a worldwide problem of Public Health, not away from social- economical, cultural

and political factors conditioning namely of a high level of unemployment, poverty, emigration and immigration, a liberal sexual approach and drug addiction.[12, 13, 14, 15, 16, 17, 18, 19, 20] All over the world policies of information, prevention and control of this infection are being taken although there is a long way to go.

At hospital level, the Infectious Diseases Services, both national as international have already exceeded their capacity for an adequate and quick response, and is no longer "someone else's problem" [13] to become a responsibility of all services and specialties, with whom it can be involved directly or indirectly. Nowadays, it is undisputable the Internist role following up HIV-infected patients as, by one side, the expansion of such pandemics and on the other side its characteristics of chronic and multisystemic disease.

In such context, the Medicine II Service of Sao Bernardo Hospital is the example of an Internal Medicine service with interested professionals in the area of Infectious Diseases, being the responsibility of one of the hospital assistants the Infectious Diseases Clinic, the integrated day hospital already mentioned. Still to be highlighted the existence of the Bronchoscopy Unit in this service since 1994, especially important due to the prevalence of bronchopulmonary pathology in HIV-infected patients. Regarding other complementary exams diagnostic needed in this area, Sao Bernardo Hospital also has important support services as: Immune-Haemotherapy, Immuno-Allergology, Clinical Pathology, Anatomical Pathology, Image Screening (with CT), Cardiology, Gastroenterology, General Surgery, Ophthalmology, Gynaecology and Obstetrics, Urology and Psychiatry.

From the retrospective study carried out, we highlighted:

1 – 61 patients were admitted, and it was verified a progressive increase in the number of admissions on the period of 42 months, totalizing 134 corresponding to 3.6% of all the admitted patient in our service for the same period.

2 - The average delay for admission was not too high (15.8 days) comparing to the general service average (10.9 days), and regarding the complexity of the clinical and social components involved, all do it has been observed that 17 patients have left the service in the first days after admission. Both studies carried out at Santa Maria Hospital[7] and Capuchos Hospital[8] show average delays (respectively 31 and 21 days) maybe because they were obtained in the wider timeframe (around eight years) including partially the 80s when there was not the same experience in HIV infection, what on its own could contribute for prolonging the hospital stay. It is a fact that the casuistry on Medicine 3 Service of Capuchos Hospital,[8] from 1992 to 1994, shows an average delay of around 17 days whilst is not far away from what we got.

3 – The distribution by gender, race, age and virus type was the expected, related with other national casuistries already presented.[6,7,8,,21] It was found more frequently in male patients, Caucasian, on their 30s and infected by type I HIV. We verified however that both the percentage of admissions in infected patients by type 2 HIV (8.9%), as the percentage of infected patients by the same virus (9.8%) are above the recorded at national level (7.5%) by CVEDT on the 30th June 1995.[1] A possible explanation can be related with the fact that Setubal is one of the districts with higher prevalence of population coming from Africa Western Coast, having therefore the possibility of increased contact with the same sexual and/or blood route.[16, 17, 22] We recorded six patients with infection by the HIV2, who were admitted in average twice (thresholds: 1 – 5). Regarding the risk factor, four were heterosexual (one from Guinea, another one having spent his military service in Africa and two with a history of multiple partners), one was a drug addict and the other had been subject to a blood transfusion (subsequent to a war accident in Africa).

4 – While in patients infected by HIV2, heterosexuality prevails, similar to the national studies[7] and what is referred in literature,[23] in patients infected by HIV1 we found a higher frequency of drug addicts, 57% (above the national number), 31.8% in 6/95 [1] and 33.9% in 12/95, [5] but according with the prevalence of this type of patients in our Infectious Diseases Clinic [21] and favored by the social economical poor conditions existing in Setubal district (namely the higher rate of unemployment in relation to the reminder of the country).[22, 24] to be highlighted that in 1993 an increase of 14.1% appointments made in Setubal Health Center, regarding the previous year in the district represented 5.3% of the recorded at national level.[22]

5 - In the immunology evaluation and staging, it was seen that 60% of patients admitted had CD4< 200/mm3 (*Fig. 9*) a similar result to the one obtained at Capuchos Hospital (57.6%), [8] what explains, in our study, the high percentage of cases in advanced stages of the infection, WR 6 – 61%, (*Fig. 10*) and with

AIDS criteria. Most (46%) is unable of performing their daily tasks or active work: although they still can handle their personal hygiene, Karnofsky from 60 - 70, (*Fig. 11*).

The most prevalent major opportunistic infection was tuberculosis, predominantly in its pleuropulmonary form (Fig. 13), being notorious its growing importance, also observed in other national [6,7,8, 25, 26, 27, 28] and international[29, 30, 31] studies. Therefore and absolutely justified the Center for Disease Control and Prevention, in its last review in 1993,[9] has included as AIDS criterion not only tuberculosis in its extrapulmonary forms but also the pulmonary one. In our study, we will find this way a higher absolute number of tuberculosis regarding pneumonias by *Pneumocystis carinii,* as it was recorded by the Center for Epidemiologic Surveillance for Transmissible Diseases (CVEDT) since 1993. [3]

Conversely to Pulido Valente Hospital casuistry where there is a predominance of heterosexuals (61%), [32] we observed that only 31% of tuberculosis cases emerged in heterosexuals, but 65.6% in drug addicts, a value above 10% higher then the observed at national level by the CVEDT, [3] what can probably be explained by the high prevalence of drug addicts in our district, as it was already mentioned. Also, the pneumonia by *Pneumocystis carinii,* is more frequently found is in drug addicts (36.8%) followed by the Homo/ bisexuals (31.5%). According the CVEDT, of all cases recorded at national level, this is the last category of transmission to reach the first place (40%), and drug addiction to go to third place (24%). [3]

The high number of presumed diagnosis referred in most cases to pneumonia by *Pneumocystis carinii,* and cerebral toxoplasmosis as it is verified in other published series. [6]

Admission mortality was relatively low (10%), comparing with the general mortality in our service in the 3.5 years of study (15%) and comparing with other services casuistries in HIV patients: 35% in Santa Maria study, [7] 31.3% for WR – 5 and 63.9% for WR – 6, in the study of Curry Cabral hospital. [6] One of the possible explanations can be related with the fact that some terminal cases would go home, by request of the patient and/or family.

Most inpatients (94%) was referred to the outpatient clinic of Infectious diseases in our hospital, number which has been growing also in a very marked way. [21]

The authors conclude that HIV infection is ever more often an important reason for admission, even in district hospitals and in Internal Medicine services. ■

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