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Epidemiological and Clinical Features of HIV/AIDS Patients Attending to the National Clinic of HIV/AIDS Control, Qazvin, Iran through 2009-2014

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ABSTRACT: HIV causes a persistent infection. The leading route of infection is intravenous drug addiction in Iran, but sexual transmission is increasing. The aim of the present study was to describe epidemiological and clinical features of patients attending to a National Clinic, Qazvin, Iran. This cross sectional retrospective study was held out by reviewing the patient profiles from 2009 to 2014. Data was registered in a checklist designed for this purpose and then were analyzed. In this study, 24.7 % of patients were female. The mean age of the patients was 33.7±5.3 years. 50.6 % of the patients were residents of prisons. The most frequent clinical complaint at the time of diagnosis was pruritic skin eruptions. The main route of infection was intravenous drug addiction (70.1%). 62.3 % of the patients were receiving antiretroviral medication. The most common adverse effects were nausea (27.1%) and thrombocytopenia (20.8%). Ongoing changes in epidemiology of HIV infection merit the continuous determination of these characteristics, especially age, route of infection and gender of the patients to reach very important conclusions.

Keywords: AIDS, epidemiology, adverse reactions.

INTRODUCTION

Acquired immune deficiency syndrome (AIDS) was unknown until 1981. In 1984 the human immunodeficiency virus (HIV) was identified as the causative agent. Now, after 34 years, HIV infection is a pandemic and nearly 33 million patients across the worlds have been diagnosed with HIV infection (Kar, 2015). The Cases have been reported from almost all countries. In Iran, the first case was reported in 1987 (Moradi F *et al*., 2000). Until 2006, 13000 cases were detected in Iran (Fallahzadeh *et al*., 2009). Based on the last registered epidemiologic report of WHO, it reached to 28663 now (UNAIDS, 2015).

Globally, intravenous drug addiction is not a frequent route of spreading HIV infection; as from 10 HIV/AIDS patients in the world, intravenous drug addiction was the risk factor of infection in one case (Mathers *et al*., 2010b), but the most frequent route of spread of infection in Iran is by shared contaminated needles used by intravenous drug abusers. In this country, 67% of HIV positive individuals have a history of intravenous drug abuse. In addition, Iran has the highest prevalence of HIV infection among intravenous drug abusers in the Middle East region. Approximately 15% of intravenous drug abusers in Iran are HIV positive (Fettig *et al*., 2014). Till now, in the Middle East, sexual transmission was not an important route of infection like Africa (Azin, 2010). But, increasing the incidence of infection of women in Iran is worrying, as the rate of female infection with HIV has reached to 10.7% in 2013. It is an important point that in 2013, 29.2 % of newly diagnosed patients in Iran were female which is obviously worrying. The severity of this issue is more prominent when we consider that this rate was only 1.6 % in 2002 (UNAIDS, 2015). In studies performed to predict the behavior of the epidemic in Iran, it is predicted that the proportion of sexual transmission will increase and transmission through drug injection will be reduced in the coming years (Haghdoost *et al*., 2011). The HIV/AIDS pandemic and the spread of the virus in developing countries is a global emergency and one of the greatest challenges facing global human society. Five people are infected with HIV every minute.

By 2008, alongside one person who were treated with antiviral drugs in the world, 5 people have been infected with the virus (Azin, 2010). With the introduction of anti-retroviral drugs, the treatment of patients with HIV/AIDS has changed dramatically. But It should be noted that the establishment and maintenance of adherence to treatment is of particular importance in HIV/AIDS patients (Emamzadeh-Fard *et al*., 2012).

Lack of awareness about routs of transmission and prevention, and the epidemiology among young population of the Middle East countries make this region dangerously vulnerable to this infection. Considering the importance of health and economic burden of the pandemic and the dynamic nature of the disease, investigating epidemiologic data and clinical manifestations over time in each community is a health priority. This study was performed to evaluate epidemiological and clinical features of HIV/AIDS patients in Qazvin province, Iran. This province having a population of over one million inhabitants which is located on the southern margin of the Alborz mountain ranges within latitude between 35° 24' and 36° 48' N.

PATIENTS AND METHODS

This retrospective cross-sectional study was conducted on HIV/AIDS patients referred to the HIV/AIDS National Health Clinic, Qazvin, Iran during 2009 to 2014. This is the sole center for observation and treatment of HIV/AIDS in this province and covers a population of approximately one million habitants. Diagnosis of HIV infection was based on at least two positive results for anti HIV ELISA confirmed by Western blot assay. All already deceased patients and patients emigrated to other provinces were excluded from the study. After completing the missed data by phone contact with the patients or attending to their homes and taking their consent for participation to the study, all data including personal and social characteristics, place of residence, and disease characteristics were entered in a checklist and analyzed by SPSS software. This check list included demographic data (age, gender, level of education, etc.), site of referral, underlying disorders, the first clinical signs and symptoms, lab test results on diagnosis and administration of ART treatment.

Collection and analysis of data were performed with full respect for medical ethics issues and non-disclosure of secrets of the patients. Data for descriptive statistics were reported as the mean and standard deviation for quantitative variables and as frequency and percent for qualitative variables.

RESULTS

In the current study, the confirmed HIV/AIDS patients of Qazvin province from 2009 to 2014 were studied. In this group 19 (24.7%) were female and 58 (75.3 %) were male. Mean age was 33.7 ± 5.3 (ranged from 4 to 57 years). The most prevalent age group was 30-40 years old (35 patients), and the least was over 50 years age group (3 patients). Demographic characteristics and comorbidities in HIV/AIDS patients are represented in Table 1. As seen in the table, most of the patients were unemployed and were illiterate.

Table 1: Demographic characteristics and comorbidities in HIV/AIDS patients in Qazvin province, Iran from 2010 to 2015.

		Frequency n = 77	**percent**
Gender	Female	19	24.7
	Male	58	75.3
Age group	Less than 20	5	6.5
	20-29	22	28.6
	30-39	35	45.4
	40-49	12	15.6
	Higher than 50	3	3.9
Marital status	Single	37	48.0
	Married	33	42.9
	Widow or divorced	7	9.1
Occupation	unemployed	48	62.3
	employed	25	32.5
	retired	4	5.2
The level of education	illiterate	6	7.8
	Primary school	32	41.5
	Secondary school	24	31.2
	Diploma	14	18.2
	college	1	1.3
Place of residence	Private home	36	46.8
	Public residency	2	2.6
	Prison	39	50.6

The patients had been referred from different centers. In this study, most patients were referred from prisons. The most prevalent risk factor for infection were history of injecting drug abuse, prison history, use of shared needles, tattooing , having multiple sex partners and a history of unhealthy phlebotomy. At the same time, many patients had comorbid diseases. Co-infection with hepatitis C virus was the most prevalent one. In Table 2, the referral center, risk factors and comorbidities are presented.

The most prevalent clinical complaints at the time of diagnosis were maculopapular rash, oral thrush and weight loss. In addition, numerous psychological symptoms had been observed. Also, it was found that 45.4 % of them suffered from some degree of depression (Table 3).

Table 2: The referral center, the underlying problems, and comorbidities in the studied patients.

		Frequency	**percent**
The referral center	State prison	40	52.0
	Supportive agencies	2	2.6
	State health centers	15	19.4
	State blood transfusion office	14	18.2
	Private health offices	2	2.6
	Self-attendance	4	5.2
Risk factor	IV drug abuse	54	70.1
	Multiple sexual partners	28	36.3
	Imprisonment	49	63.3
	Shared needle or blade	48	62.3
	Unclean tattooing or phlebotomy	11	14.3
	Infected mother	3	3.9
	Infected spouse	5	6.5
	Unknown	19	24.7
Co-infection	Hepatitis B	5	6.5
	Hepatitis C	22	28.6
	Hepatitis B and C	2	2.6
	TB	4	5.2
	TB and Hepatitis C	1	1.3
	None	43	55.8

Table 3: The frequency distribution of presenting symptoms and psychological complaints among the studied

		Frequency	**percent**
The presenting symptom	Skin rash	13	16.9
	Oral thrush and aphthous ulcer	9	11.7
	lymphadenopathy	7	9.1
	Weight loss	10	12.9
	Loss of appetite	7	9.1
	None	31	40.3
Psychological complaints	depression	26	33.7
	Aggressive behavior	11	14.3
	Depression and aggressive behavior	9	11.7
	Self injury	2	2.6
	None	29	37.7

Since 2009 facilities for determining CD4 count was provided in the province and it was found that the majority of the patients had CD4 counts lower than 500 at diagnosis time (Table 4).

Among the studied patients, 48 were treated with antiretroviral drugs. All patients received a treatment regimen consisting of Zidovudine, Lamivudine and Efavirenz. The most common side effects included nausea (27.1%) and thrombocytopenia (20.8%), respectively (Table 5). None of these side effects were serious and only in one case nausea and vomiting and severe muscle pain led to prolonged discontinuation of the treatment.

Table 4: The frequency distribution of laboratory test results at the time of diagnosis in the patients.

		Mean	Standard deviation
Peripheral blood variables	WBC	5208	1498
	Percent of lymph	24.3	6.4
	TLC	1265.5	95.8
	Hb	14.1	2.2
	Plt.	253000	41800
CD4	Less than 500	47 (61%)	-
	500-1000	17 (22.1%)	-
	More than 1000	8 (10.4%)	-
	Unknown	5 (6.5%)	-
Transaminases	AST	33.3	12.7
	ALT	28.9	12.3
Biochemical parameters	FBS	87.6	15.7
	Cr	1.1	0.2
	TG	153	25.5
	cholesterol	137.1	21.3

Table 5: Adverse drug reactions reported in patients treated with antiretroviral drugs.

Side effects		**Frequency**	**Percent**
GI side effects	Nausea	13	27.1
	Vomiting	1	2.1
	Loss of appetite	3	6.3
	Epigastric pain	2	4.2
Neuropsychological side effects	Headache	8	16.7
	Drowsiness	5	10.4
	Depression	1	2.1
	Anxiety	2	4.2
	Nightmare	4	8.3
Mucocutaneous lesions	Maculopapular rash	9	18.8
	Pruritus and dermatitis	2	4.2
	Oral lesion	1	2.1
Systemic symptoms	Weakness	4	8.3
	Arthralgia	2	4.2
	Muscle pain	3	6.3
Hematologic side effects	Anemia	3	6.3
	Thrombocytopenia	10	20.8

DISCUSSION

The results of the present study showed that majority of the HIV/AIDS patients in Qazvin province, Iran, are male and belong to 30 to 39 years old age group that are in the active and economically productive years of life. A significant number of patients were also single and unemployed. It is possible that the social consequences caused by the disease and the special situation of patients such as drug addiction and its impact on their marital status and employment are the cause of this fact. Several studies suggest a sharp drop in the quality of life in these patients. In a study in 2006 in Tehran, 85% of patients were male and the majority of the patients belonged to the age group of 30 to 39 years old. Similar to the current study the majority of patients were illiterate, single and unemployed.

Moreover, quality of life among HIV / AIDS patients were significantly different with the control group (Nojoomi & Anbari, 2008). Agrawal *et al*, in a study in Nepal showed that the quality of life in patients with HIV / AIDS is significantly lower than the control group (Agrawal *et al*., 2014).

In the present study, quality of life has not been studied systematically, but the mentioned results and especially the finding that the majority of patients had been referred from prisons demonstrates poor quality of life in them. The number of homeless patients in our study were not high and only 1.3% of patients were homeless. In a study performed in 2007 and 2008, the prevalence of HIV infection among homeless people in Tehran was 7.1% (Ostadtaghizadeh *et al*., 2014).

In this study, intravenous drug abuse and the use of contaminated injection equipment was the most prevalent risk factor for infection. In Iran this is the most frequent risk factor of infection as up to 2010, 69.9 % of HIV/AIDS patients in this country acquired the disease by this route (Keshtkar *et al*., 2012). In a study at the East Azerbaijan province of Iran, the route of infection transmission was intravenous drug abuse in 59% of cases that was comparable to the present study (Haghgoo *et al*., 2015). In the last decade, regional studies suggest occurrence of the outbreaks of HIV infection with an incidence rate over 5 percent among intravenous drug abusers in Iran (Obermeyer, 2006). But in a recent study, the prevalence in intravenous drug abusers in this country has reaches to over 20.2 percent (Salehi *et al*., 2015). The highest prevalence has been reported from Libya by Mirzoyan *et al* who reported 87.1% prevalence of HIV infection in this population (Mirzoyan *et al*., 2013). Ruan *et al* reported an incidence rate of 2.5 Per 100 Person-Years in 2002-2004 that had been decreased to 0.6 Per 100 Person-Years in 2006-2008 in the Xichang city of Sichuan province in southwestern China (Ruan *et al*., 2013). In this study, the most prevalent co-infection among HIV/AIDS patients was hepatitis C. In a study that had been conducted between 2005 and 2007 in Vietnam, a group of IDUs with a high frequency of HIV/AIDS (35.1%) were participated. The prevalence of co-infection with hepatitis C among HIV-positive patients were 34.8 percent (Zhang *et al*., 2015). In a meta-analysis with the participation of 13821 intravenous drug abusers in Iran, the prevalence of HCV co-infection was calculated as 11 percent (Malekinejad *et al*., 2015).

It is obvious that psychological disorders in HIV/AIDS patients are an important issue. In this study, 62.3% of patients suffered from a psychological disorder by some means. In a study published in 2011, the symptoms of PTSD, anxiety and depression in patients with HIV infection was significantly higher than other patients in Imam Khomeini hospital in Tehran (Moradi *et al*., 2012).

In the present study, 62.3 % of patients were receiving antiretroviral medication. The widespread use of these drugs has played an important role in improving the quality of life of patients in recent years. In the past years, access to these drugs was very low, especially among intravenous drug abusers. The results of an international study confirmed that in 2007, only 2% of HIV-positive intravenous drug users in Iran had been received these drugs (Mathers *et al*., 2010 a). It is interesting that between 2002 and 2008, access to antiretroviral treatment in some developing countries has increased 10 times (Azin, 2010). In the patients who were followed up in Qazvin province, side effects of the drugs were generally mild and well tolerated. Long-term adherence to drug treatment in this study (98.0 percent) was comparable to other studies and higher than some other studies in the Middle East region. In two studies in the HIV / AIDS counseling center of the Imam Khomeini Hospital in Tehran in 2005-2007 (Khalili *et al*., 2012) and 2008-2009 (Hadadi *et al*., 2011), the long-term adherence to treatment were 65.5% and 59.6% respectively. Interestingly, the prevalence of thrombocytopenia in our patients, were higher than many other studies in other geographical regions of the world (Srikanth *et al*., 2012, Santini-Oliveira *et al*., 2014, Bezabhe *et al*., 2015). Along with tolerable side effects of these drugs, the use of these drugs among Iranian patients is increasing in recent years, Which will definitely improve the health state and the quality of life in these patients.

In conclusion, Studies in recent years indicate gradual changes in the age and gender distribution of HIV/AIDS in Iran. According to the risk of change of the transmission pattern of the infection from the limited spread between intravenous drug abusers to widespread sexually spread in the society, monitoring of the epidemiologic changes in every location is a priority. It should be noted that this disease targets economically active groups of the society. As a result, a precise analysis of the treatment side effects and patterns of adherence to treatment is also an important issue.

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