

Full Length Research Paper

Human immunodeficiency virus (HIV) positive females in Saudi Arabia: Pregnancy and neonatal outcome

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This study was aimed to describe the demographic, presentation, clinical manifestation, and outcome of human immunodeficiency virus (HIV) positive females in Saudi Arabia. Special attention was drawn to the outcome of HIV positive pregnant females. A retrospective cohort study was conducted to evaluate HIV positive patients who presented to the emergency room and out-patient department in King Abdulaziz University Hospital (KAUH) between 1st of January, 2001 and 30th of December, 2010. Data were collected from the medical records of the medical ward, outpatient clinic and discharge summary registry. The data included: age, chief complaint, investigation results upon admission, progress of the disease and whether the partner was informed and/or screened. A total number of 195 HIV patients were included in the study. The majority presented with fever and respiratory symptoms. Out of the 195 patients, 10 were pregnant, of which 3 patients died soon after admission, 6 presented with serious complications and only 1 patient was diagnosed early and received optimum treatment resulting in an HIV negative baby. Fetal outcome consisted of 7 living newborns; of these, 6 were HIV-positive (85.7%), of which 2 were breastfed (33.3%). The true prevalence of HIV remains unknown especially in the Middle East. Limited testing for patients at high risk of HIV often results in many missed cases particularly in pregnancy, where early detection and treatment could give the baby a chance of an HIV free life, which is the ultimate goal.

Key words: Human immunodeficiency virus (HIV), pregnancy, fetal outcome.

INTRODUCTION

In a conservative society, where discussing sexually transmitted diseases is considered a taboo, the increasing prevalence of these diseases has become evident (Tariq, 2006). The real question is whether denying the increasing prevalence of the problem will serve to improve or further worsen the situation? Are we really immune?

Sexually transmitted infections are one of the most under diagnosed health problems worldwide. They are rapidly becoming a progressive threat to society. Despite their being common, their variable presentations and asymptomatic status of unaware and sexually active individuals makes it difficult to track them. HIV was included in the notifiable diseases in Saudi Arabia back in 1984 (Tariq, 2006). However, the lack of awareness of

the general public, health workers, and officials has contributed to limitations in its diagnosis, screening and estimating the prevalence of the disease (Fageeh, 2009).

Previous studies have shown that early detection of asymptomatic Human immunodeficiency virus (HIV)-1 infection may help in controlling the spread of infection and at the same time might better the prognosis (Kitahata et al., 2009). The presence of symptoms correlates with a more rapid progression to Acquired immunodeficiency syndrome (AIDS) (Buchbinder et al., 2005). The risk of progression to an AIDS-defining diagnosis within three years following seroconversion was substantially higher in those with acute symptoms lasting more than 14 days than in those who were asymptomatic or had only mild symptoms (78 and 10%, respectively) (Pedersen et al.,

1989). This necessitates the screening of HIV by health-care providers before patients become symptomatic, to allow for a better prognosis.

Our aim is to highlight the importance of early detection and a management approach to HIV patients in Saudi Arabia.

MATERIALS AND METHODS

The study was conducted in King Abdulaziz University Hospital (KAUH), which has a full operational capacity of 895 beds. It provides a spectrum of tertiary health care services to the community. It is a retrospective cohort study done to evaluate HIV positive patients who presented to the emergency room and outpatient department in KAUH between 1st of January, 2001 and the 30th of December, 2010. Patients enrolled in the study presented with an AIDS-defining illness. The detection of the disease depended on HIV testing and was confirmed by CD4 cell count and HIV ribonucleic acid (RNA) level at detection.

HIV cases are detected and screened mainly based on clinical suspicion. Enzyme linked immunosorbent essays (ELISA) are used for both HIV-1 and HIV-2 testing. Positive ELISA is confirmed by a Western blot test. The expanded World Health Organization (WHO) was used to define AIDS (Tariq, 2006). The Ministry of Health (MOH) is notified of all the positive cases. They are then referred to a tertiary governmental HIV centre and are treated with Highly active antiretroviral therapy (HAART). The cases are then followed up by testing for HIV viral load and CD4/CD8 counts.

Data was collected from the medical ward, outpatient clinic, and discharge summary registry for HIV positive patients. This included: age, chief complaint, investigation results upon admission, progress of the disease and whether the partner was informed or screened. Annual reports that are issued and used by the concerned officials in the MOH are not made available for the public. Approval from the ethical committee was obtained.

RESULTS

The total number of HIV positive patients was 195. The mean age of the patients was 41.14 years. The eldest patient was 73 years old and the youngest was a newborn. The female to male ratio was almost 1:1, with 107 female patients to 94 male patients. Out of 195 patients, only 31 (15.8%) were Saudi patients (Table 1). A total of 136 patients (69.74%) presented through the emergency room while 59 patients (30.02%) presented through the Outpatient department. The main presenting symptoms were fever, in 94 patients (48.20 %), cough in 66 patients (33.84%), chest pain in 41 patients (21.02%), vomiting in 37 patients (18.9%) and nausea in 32 patients (16.41%). However, a significantly smaller number of patients complained of diarrhea [9 patients (4.6%)] (Table 2).

With regards to marital status, 99 patients (50.77%) were married while 49 patients (25.13%) were single (Table 3). 10 of these patients were pregnant. Their mean age was 29 years, the eldest being 41 years old and the youngest being 17 years old. One patient was of

Saudi nationality and the rest were from neighboring countries. All of them were married except for one who presented with septic abortion. Five of them (50%) presented in their first pregnancy, 2 (20%) were Para 2, with no living children, 1 had 3 pregnancies with only 2 living children, and 2 had two living children. The infection was not diagnosed during the present or the previous pregnancies in 70% of the cases and in none before 20 weeks of pregnancy. The screening of the sexual partners was not documented in any medical record since it is not obligatory. Two patients presented in labor, while the others presented with serious complications (septic shock, pulmonary tuberculosis (TB), abdominal TB, convulsions, breast abscess).

Out of 7 living newborns, 6 babies were infected, 2 of which were breastfed. During the study period, among the cases properly monitored, only one newborn (10%) was not infected with HIV (Table 4).

DISCUSSION

The incidence of HIV has reached unprecedented figures recently. As of December, 2009 more than 35 million had died since the onset of the epidemic, 33 million were estimated to be living with HIV/AIDS, where more than 50% of them are women (UNAIDS, 2010). Morbidity and mortality rates during pregnancy have doubled, affecting both mother and fetus simultaneously. 25 million children have been orphaned and 2.5 million children are living with HIV/AIDS (UNAIDS, 2008).

Each day, 7,000 people are newly infected with HIV, with increasing numbers among young adults, women, and children (Pedersen et al., 1989). These numbers are only likely to rise unless more aggressive prevention campaigns and intervention programs intercede to slow the pace of the epidemic (UNAIDS, 2009).

In Islamic countries, limited information is available regarding the true prevalence of HIV/AIDS (Abu-Raddad et al., 2010; Obermeyer, 2006). Since risky sexual behavior is forbidden in Islam. HIV/AIDS is assumed to be of very low prevalence. A local study performed in Riyadh included 74,662 individuals who presented for the obligatory premarital screening program for HIV/AIDS showed that the prevalence is 0.03%. This may suggest that we fall among the lowest prevalence worldwide. This study however fails to reflect definite figures as it was executed on a limited number of individuals who knew they were being screened and did not include a diverse age group (Abu-Raddad et al., 2010). Other local studies showed that the incidence of HIV in Saudi Arabia is escalating (Tariq et al., 2004; Al-Mazrou et al., 2005).

In Saudi Arabia, HIV testing is not included in the routine antenatal screening program. This might be attributed to the belief that the population fall within a low

Table 1. Distribution of HIV positive patients among different nationalities.

Nationality	HIV positive patients
Somalian	42
Chadian	46
Nigerian	2
Yemeni	30
Sudanese	11
Saudi	31
Eritrian	4
Indonesian	7
Bangladesh	3
Ethiopian	4
Egyptian	4
Palestinian	5
Unknown	6

Table 2. The marital status of the HIV positive patients.

Marital status	HIV positive patients
Married	99
Divorced	12
Widowed	15
Single	49
Unstated	20

risk group. Hence, no voluntary counseling and testing (VCT) program was developed to help provide life-sustaining care for those living with HIV (Kabbash et al., 2010). Even though patients with HIV receive the maximum possible health care, counseling can serve as a preventive tool by advising HIV negative patients on how to reduce exposure and stay negative.

In this study, majority of the patients (136 patients [69.74%]) presented through the emergency room. Out of 195 patients, 27 patients (13.45%) died soon after admission to the hospital. This shows that patients presenting to the hospital were already in an advanced stage of their illness. Out of 10 pregnant patients, 3 (30%) died within a few days of admission. The high mortality rate is mainly due to their presentation at a terminal stage. The poor fetal outcome is also related to the late presentation, where out of 10 pregnancies, only one baby (which received an early diagnosis and management) was HIV negative.

Out of 10 pregnancies, 5 babies were discharged with the mother, 3 were breastfed by the mother due to late diagnosis. This has increased their chance of becoming infected due to a 30 to 50% transmission rate (Birkhead et al., 2010). If patients were diagnosed early, an elective

Table 3. Depicts the presenting symptoms of the HIV positive patients.

Symptom	HIV positive patients
Fever	94
Headache	12
Myalgia	0
Arthralgia	22
Loss of appetite	1
Nausea	32
Vomiting	37
Lymphadenitis	7
Cough	66
Sore Throat	2
Diarrhea	9
Chest Pain	41
Fatigue	1
Shortness of breath	3
Weakness	7
Confusion	5
Body aches	28
Weight Loss	14

caesarian could have been opted for, patients would have been warned against breastfeeding, reducing the risk of perinatal transmission to less than 2% (Birkhead et al., 2010). Mother to child transmission has been virtually eliminated in a relatively short period of time (Ellis et al., 2002). This was achieved in countries where intense, comprehensive public health program has maximized the benefits of advances in both diagnosis and treatment of HIV infection (Fowler and Newell, 2002; Brocklehurst and French, 1998). A similar experience was reported in a local study conducted in Riyadh (Edathodu et al., 2010). The health care providers of these cases were not able to take the necessary precautions, which is attributable to the absence of results. Although the risk of exposure is limited, nevertheless the enormity of the disease makes even the smallest mistakes unforgivable to any victim.

HIV transmission to a healthcare provider could be from the patient's various secretions on the mucosa (amniotic fluid, blood, urine, etc) where the incidence is 0.09% (Mofenson and Committee on Pediatric AIDS, 2000; Henderson et al., 1990). Another mode of transmission could be by a needlestick injury where the incidence is 0.36%, according to a report from the Centers for Disease Control (CDC) Cooperative Needlestick Surveillance Group (1993) (Henderson et al., 1990). Another meta-analysis reports the risk to be 0.23%. That risk can be eliminated by more than 80% by simple precautions such as cleaning the affected area with the affected area with alcohol and giving the affected person

Table 4. Clinical profile of HIV-positive pregnant women at KAUH, 2001 to 2010.

Presentation status	Age (years)	Parity	Nationality	Mode of delivery	GA (weeks)	Result of HIV screen at time of presentation	Fetal outcome	Breastfed	Maternal outcome
Eclampsia, convulsion, unconsciousness, genital warts	41	P2 (no living children)	Nigerian	CD	30	Not available	Stillborn	No	Died 2 days post admission
Septic shock, generalized lymphadenopathy	30	P0	Sudanese	SVD	32	Not available	IUFD	No	Died 2 days post admission
Abdominal TB	28	P3 (2 living children)	Saudi	SVD	39	Available. Diagnosis made at 4 weeks of pregnancy	2.4 kg/HIV negative	No	Referred to an infectious center
In labor	25	P2 (no living children)	Somali	SVD at home	40	Not available. Diagnosis made 4 months post-SVD	3.3 kg/ HIV positive	No	Died 1 year post admission
Breast abscess	27	P2 (2 living children)	Chadian	SVD	40	Not available	3.0 kg/ HIV positive	Yes	Referred to an infectious center
Severe GIT symptoms	33	P2 (2 living children)	Somali	SVD	38	Available. Diagnosis made at 22 weeks of pregnancy	2.5 kg/ HIV positive	No	Referred to an infectious center
In labor	21	P0	Somali	SVD	29	Not available	1.2 kg/preterm/ HIV positive	No	Referred to an infectious center
Pulmonary TB, genital warts	40	P0	Nigerian	SVD	34	Available. Diagnosis made at 20 weeks of pregnancy	1.7 kg/ HIV positive	No records	Referred to an infectious center
In labor	17	P0	Yemeni	SVD	40	Not available	3.0 kg/ HIV positive	Yes	Referred to an infectious center
Septic shock, GIT symptoms, genital ulcer	28	P0	Chadian	Induced abortion	8	Available. Diagnosis made within 14 hours of presentation	Abortion	No	Referred to an infectious center

CD, cesarean delivery; GA, gestational age; GIT, gastrointestinal tract; IUFD, in utero fetal demise; KAUH, King Abdulaziz University Hospital; SVD, spontaneous vaginal delivery; TB, tuberculosis.

prophylactic antiviral treatment (Baggaley et al., 2006).

Early diagnosis and proper medical care could improve the quality of life for the mother and prevent fetal infection (Martí et al., 2007). Fighting the spread of the disease requires public awareness

and well-organized national programs involving all health care providers. However, focusing on health education programs may offset the need for mandatory testing. Routine voluntary screening for HIV once every three to five years is justified on both clinical and economical grounds

(Olagbuji et al., 2010). One time screening of the general population would also be cost effective (Al-Jabri et al., 2010). Saudi Arabia is financially capable of screening for these infections. HIV was recently included in the mandatory premarital screening test which provides screening for a

limited group of people. A larger screening program should be enforced in the health sector to determine the true prevalence of HIV in our community (David et al., 2005).

Conclusion

HIV is a major devastating health problem where late diagnosis often leads to a poor prognosis. This is further pronounced during pregnancy where both the lives of the mother and fetus are at risk. Early recognition and management of the disease by health care providers is the first step to deal with the situation. Public health officials should emphasize the importance of HIV awareness and screening. An early diagnosis integrated with intensified clinical care, obstetrical monitoring and nursing care is crucial to provide optimum treatment and a reduction of the rates of vertical transmission.

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