

HIV/AIDS Status in Baghdad/ Iraq Over Ten Years (2010-2019)

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Abstract

Background: Human immunodeficiency Virus and/or Acquired immunodeficiency Syndrome (HIV/AIDS) hitherto represents a serious global health problem.

Objective: To disclose the status and trend of HIV/AIDS in Baghdad/ Capital of Iraq throughout the last ten years (2010 -2019).

Materials and Methods: A retrospective study of the available data on new HIV cases for the last ten years was conducted in Baghdad/ Capital of Iraq from August 2018 to December 2019. The data included age, sex, annual number of new HIV cases, AIDS-related deaths, years of diagnosis, and risk factors associated-HIV transmission. All suspected HIV/AIDS cases were examined clinically and tested initially for anti-HIV antibodies by ELISA and confirmed by western blot technique.

Results: A cumulative annual number of new HIV cases registered for the last ten years was 287. The trend of number of new HIV cases increased gradually and steadily over successive ten years 2010-2019. The majority of them were males (79.1 %) and adults (≥ 15 years old) (98.2%). Sexual transmission had a higher rate of new HIV infection (81.9%) mainly through heterosexuals (79.2 %).

Conclusion: Although the trend of the annual number of HIV cases increased with time, Baghdad remains within the area of low HIV prevalence, and there is a potential risk for exposure to an outbreak or epidemic/ endemic if no implementation of proper and effective national strategy plans on HIV/AIDS in place. Adult males play a role in rising the risk of illness. Sexual practices mainly through heterosexuals was the major route of HIV transmission.

Keywords: HIV, Status, trend, Toxicity; Baghdad; Sexual transmission

Introduction

HIV/AIDS endures the leading cause of morbidity and mortality throughout the world with a large socio-economic impact. ^[1]

In 2019, around 38.0 million people in universe living with HIV, with 1.7 million became newly HIV infected, and 700 000 were died from AIDS related illnesses ^[2-3]. An estimated that 0.7% of the world were infected with new HIV infections, the Middle East region reported the lowest HIV prevalence (<0.1%) while WHO Africa region reported the highest prevalence of HIV (3.7%)^[1, 4].

Baghdad City is the capital of Iraq with a population of seven million people, of which about four millions are living in Resafa sector and three millions living in Karkh sector. ^[5]

In Iraq, no information are available on status of HIV/AIDS except one study published in 2007 ^[6], because of governmental restriction.

Therefore such information are needed to highlight the status and trend of the new HIV cases registered in Baghdad Province/ Capital of Iraq for the period extending from 2010 to 2019.

Materials and methods

This an observational, retrospective study carried out on data of new HIV cases records for Baghdad at National HIV program Center, during 2010- 2019. It was conducted in Baghdad City from August 2018 to December 2019. All the cases were referred from doctors working in governmental and private clinics and detected in Central Public Health Laboratory (CPHL)/ Baghdad, using ELISA as screening test for HIV and confirmed by Western blot testing. All positive cases are confirmed also by Polymerase Chain Reaction (PCR) and follow up periodically to ensure the effectiveness of anti-retroviral therapy (ARTs) which is free of charge in Iraq.

The detection of the HIV cases is mandatory by Iraqi government for specific groups of people having potential risk for exposure to HIV, such as, suspected HIV patients with their contacts, blood donors, pre-surgical operations, pre-marriage, pre-natal care program.

The data were collected from records and categorized into the years of diagnosis age, sex, and possible routes of HIV transmission.

Ethical approval and permissions were obtained from Ethical Approval Committee of Al-Anbar University in 23/February/2018,N0.24 in coordination with HIV/AIDS Medical Center/MOH.

Data were processed using computer software program of Statistical Package for Social Sciences (SPSS), version 26. For the analysis Chi-square and Yate's correction test were used, P-value of <0.05 was considered statistically significant.

Results

A cumulative annual number of 287 newly HIV cases were recorded for Baghdad from 2010 - 2019. Their age ranged between 4 - 65 years old. There were 227 males (79.1%) and 60 females (20.9%), giving a male to female ratio of 4.85:1.

Figure 1 shows an increased in the trend of annual number of new HIV cases in Baghdad for both sexes during the period from 2010-2019 with a significantly higher annual number in males than in females ($P<0.0001$).

Figure 2 shows that the trend of annual number new HIV cases is increased year by year; it was five cases (1.7%) in 2010, reaching to 16 cases (5.6%) for 2015 and 80 cases (27.9 %) for 2019, giving grew rate of 6.8% per year. Although there is gradual increasing in the annual number of the cases with time, Baghdad City remained within an area of low prevalence (<0.1%) and the overall annual incidence of HIV infections was <4/100,000. The trend of annual number of alive cases was parallel to the cumulative annual number of new HIV cases with duration of diagnosis while the annual number of HIV-related deaths does not show any clear trend; it remained relatively stable (static) (Figure 2).

Table 1 shows increasing in the annual number of new HIV cases in both sectors of Baghdad City between 2010-2019, with a non-significantly higher percent in Resafa sector (59.9%) compared to Karkh sector (40.1%) ($P<0.7091$).

Of the total new HIV cases, males (238) were affected more than females (49) ($P<0.0001$); majority of the males (81.9%) and females (75%) were at age group of ≥ 25 years old; 17.3% and 21.6%% of the males and females, respectively, were aged 15-24 years old. This difference was statistically of significant ($P<0.0028$). The distribution of new HIV cases had an upward trend among across all age groups with the least cases recorded among those aged <15 years old ($P<0.0027$) (Table 2).

Table 3 shows that s the possible routes of HIV transmission. It was found that sexual practices was responsible for 81.9% of the cases, blood transfusion for 4.2%, perinatal transmission for 0.35%, using illegal drug in 0.35%., while 13.2% of the new HIV cases denied any risk behavior (no specify or unknown cause). This difference was of highly significant (p-value <0.0001). Within sexual activity, heterosexual contact constituted 79.2% of the cases followed by bisexual contact at 13.6%, and homosexual contact at 7.2 %. This difference was also statistically of significant (p< 0.01145)

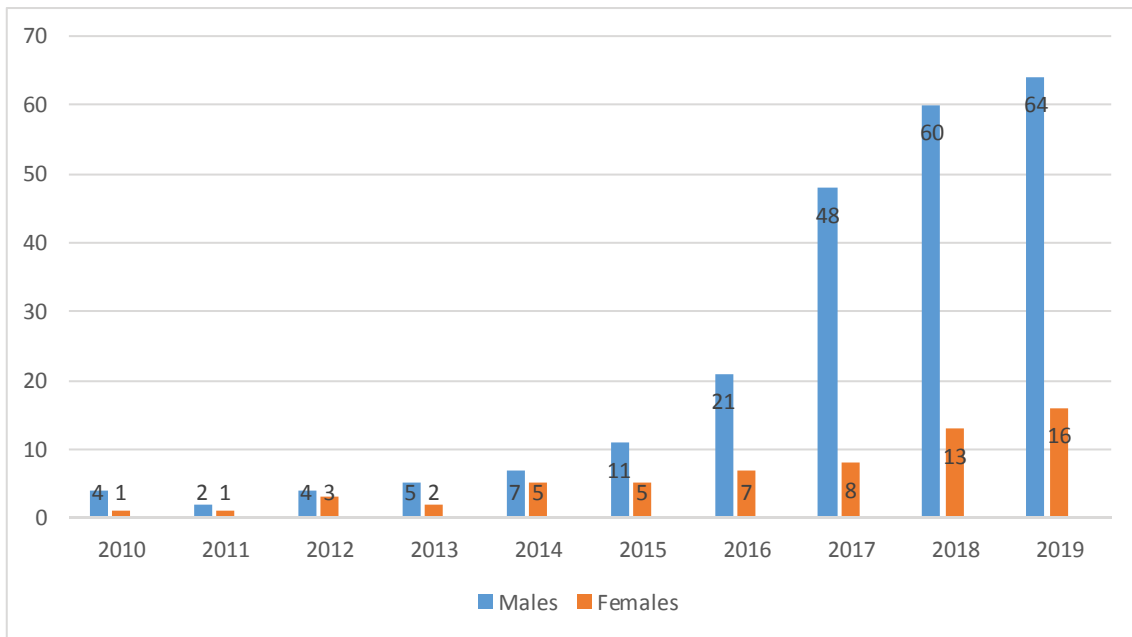


Figure 1 Distribution of annual number of new HIV cases for Baghdad according to gender (2010-2019).

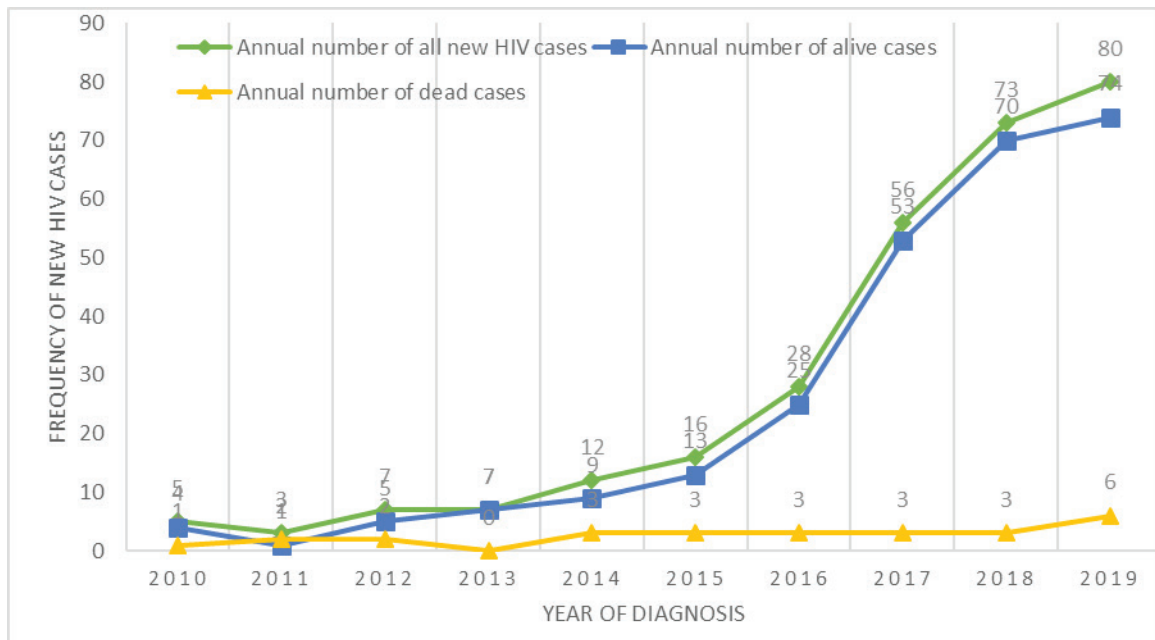


Figure 2 The trend of HIV cases detection (total, alive, and dead) for Baghdad (2010 -2019).

Table 1 Distribution of annual number of new HIV cases in Baghdad sectors (2010-2019)

			Baghdad Sectors			
			Karkh		Resafa	
Year	No.	%	No.	%	No.	%
2010	5	1.7	2	1.7	3	1.7
2011	3	1.1	1	0.8	2	1.2
2012	7	2.4	0	0.0	7	4.1
2013	7	2.4	5	4.3	2	1.2
2014	12	4.2	4	3.5	8	4.6
2015	16	5.6	6	5.2	10	5.8
2016	28	9.8	11	9.6	17	9.9
2017	56	19.5	25	21.7	31	18.0
2018	73	25.4	26	22.6	47	27.3
2019	80	27.9	35	30.4	45	26.2
Total	287	100.0	115	100.0	172	100.0
			Yate's X ² =6.304, df=9, P=0.7091			

Table 2 Distribution of annual number of new HIV cases for Baghdad (2010-2019), according to age and gender

Age group	n = 287		Gender			
	No.	%	Male		Female	
			No.	%	No.	%
0-4	2	0.7	1	0.4	1	1.7
5-14	3	1.1	2	0.4	1	1.7
15-19	6	2.1	4	1.8	2	3.3
20-24	46	16.0	35	15.5	11	18.3
≥ 25	230	80.1	185	81.9	45	75.0
Total	287	100.0	227	100.0	60	100.0
Yate's X ² =21.302 df=4 P-value=0.0027			Yate's X ² =23.508 df= 4 P-value= 0.0028			

Table 3 Possible routes of HIV transmission

Route of transmission	No.	%	Within sexual route: X ² =269.115 df=2 P-value= 0.0001
Sexual:	235	81.90	
Heterosexual	196	83.4	
Bisexual	32	13.6	
Homosexual	7	3.0	
Blood transfusion	12	4.20	
Perinatal	1	0.35	
Illegal drug injection	1	0.35	
No specify	38	13.20	
Total	287	100.0	
Yate's X ² =702.808, df=4, P-value= 0.0001			

Discussion

In this study, although the curve of new HIV diagnosed cases and alive cases shows clear rising with time from 2010 to 2019, with annual growth rate of 6.8%, and stability (static) of HIV-related deaths, Baghdad is still remaining among the areas with low HIV prevalence (<0.1%), but this may lead to a potential risk for an outbreak or epidemic/ endemic of the illness. In comparison, world estimates show that by the end of 2019, the global prevalence of HIV infection was 0.8%, and there was declining in the number of new HIV infection by 23% and AIDS-related deaths by 39% between 2010 and 2019. [2, 7-8]

Our finding is in the line to that was reported in many countries of Middle East and North of Africa (MENA) region which has the lowest prevalence of HIV globally (<0.1%), increasing in the number of new HIV infections from 2010 to 2019, while HIV-related deaths remained stable and in contrast to Sub-Saharan Africa region which has the highest HIV prevalence of all regions (6.7%) [9-11]

In this study, increasing in the new HIV infections with time may be due to increasing in the identification of HIV through an increasing in HIV testing and counselling services, increasing awareness of people about the illness, increasing access for diagnosis and for seeking ART which is free in our country. Besides that, more travel, rapid changes in socio-cultural and religious values. All these factors, collectively may contribute to a heightened the risk of HIV. The trend of HIV-related deaths was stabilize (static) with years of diagnosis and the death cases are less than alive. Stability of annual HIV-related deaths in Baghdad, reflects in part to the effectiveness of the national HIV program for diagnosis through availability of HIV testing and the success of ART programme increasing survival among people living with HIV.

In this study, both sectors of Baghdad show rising in the annual number of the new HIV cases with years of diagnosis with a higher percent in Reasfa sector. This finding may be related to a higher population density in Resafa than in Karkh sector; and over the past few

years, the presence of massage parlors in Baghdad has significantly increased especially in Resafa sector, raising concerns among authorities in Iraq's capital that sexually transmitted diseases could spread in salons that secretly provide sexual services may participate in the rising of new HIV cases although the health care services regarding HIV screening, diagnosis, treatment, and prevention are equally distributed in both sectors; in addition to that both sectors sharing the same socio-demographic characteristics, religion, cultural behavior. [12]

Regarding to age and sex, the vast majority of the cases were adult males (≥ 15 years old). This finding was consistent with UNAIDS / WHO. [3] estimate in 2019, that out of 38 million people living with HIV worldwide, 36.2 million people (95%) were adult (≥ 15 years old) and the remainder (5%) were children (< 15 years old), and globally, new IV infections among adult females declined by 17% compared with 9% among adult males. While new HIV cases among children (< 15 years old) decreased by 41% [3]. Our results are consistent to Iraqi study published previously by El-Ebadi et al [6] who found that the bulk of HIV cases were males (86.2%) and adults (> 20 years old) and also consistent to other studies conducted in Oman [13] and Qatar. [14]

Our findings may be related to the fact that the adult males in Baghdad community are more liberal in movement, travel widely outside the country, more illegal sex practice, and get the infection from his wife. Besides that, as Baghdadi community are more conservative society, social stigma restricted mainly to female HIV infected people with risky behaviors from seeking HIV testing and counseling services made them under estimated.

Epidemiology of HIV transmission is known to be changed over time from one region to another and from one country to another within the same region. [15] In the present study, sexual behavior mainly through heterosexuals, represents the main route of HIV transmission. Previously, from 1986-2005, El-Ebadi et al, found that 84.5% of new HIV Iraqi cases were transmitted by parenteral route mainly through blood donation, while sexual practice is responsible for 11.3% of the cases. [6]

Our finding is consistent to many studies conducted in different Arabian countries of Middle East region where heterosexuals was the most common mode of HIV transmission as in Kuwait, Qatar, UAE, Bahrain, [16] Oman [13], Syria, Jordan, Egypt, [4] and Palestine [17] and inconsistent to that reported in Iran and Libya, where the main route of transmission was injecting drug use [4]. Our finding is related to the fact that sexual behavior are associated with decreasing religious values, rapid socio-cultural changes, increasing international travel, unemployment, inter-personal factors, increasing costs of marriage. All these factors collectively may participate in increasing the possibility of sexual practices to become the main route of HIV transmission [17].

During 1986 and 2005, blood donation and perinatal routes were shown to be responsible for 84.6% and 4% of HIV infections in Iraq, respectively [6]; while in our study, blood transfusion is responsible for 4.0% and perinatal for 0.35% of all new HIV cases, this may reflect the effectiveness of blood screening program for blood-borne viral infections since 2010 and indicate that prevention of perinatal transmission of HIV through ante-natal care program had been more effective. In the present study, only one case (0.35%) reported illegal drug injection. This finding doesn't reflect the actual number because drug addict phenomenon is prohibited in our country and considered as social stigma. However, this leads to increase the percentage of none specify to 13.2% of the cases as unknown cause of HIV transmission.

Limitations

Overall, these study findings are important. However, as in all studies, several limitations warrant mentioning. The cumulative annual number of new HIV cases doesn't reflect the actual number because there are many new HIV cases not registered in the HIV/AIDS program center and are treated out the governmental health settings whether out-side the country or in private clinics. The second limitation is the information biases resulting from incorrect information given to the health authorities especially points regarding routes of sexual transmission especially homosexuals, illegal drug injection, and others) because they are more sensitive in a conservative country like Iraq, so many cases may report none specify (unknown cause) for HIV transmission

Conclusion

Although there was gradual increasing in the trend of the annual number of HIV cases with time, Baghdad City remains within the area of low HIV prevalence (<0.1%), and there is a potential risk for exposure to an outbreak or epidemic/endemic if no implementation of proper and effective national strategy plans on HIV/AIDS in place. Adult males have a potential risk for acquiring HIV infection. Sexual behavior mainly through heterosexuals was the most common route of HIV transmission.

Acknowledgement: The authors thank with great appreciation to the Iraqi MOH/Department of Public Health/ HIV Medical Center/Baghdad. Also to the College of the Medicine/University of Anbar and Professor Faris Al-lami consultant of Public Health/ Baghdad College of Medicine for their kind help and cooperation to complete this article.

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both MOH and MOHSER in Iraq

Conflict of Interest: None

Funding: Self-funding

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