

Seroprevalence of Syphilis Infections among Male Blood Donors at Thi-Qar Province

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Abstract

The present study was carried out from 2010 to 2012 to detect the epidemiology of syphilis infections among the male blood donors, represent patients referred to the central blood bank, at Thi-Qar province. The present study was revealed that out of 18669, 18252, and 17956 in 2010, 2011 and 2012 individuals from different regions of Thi-Qar province, total infections 315 positive cases, 60 (0.32%), 90 (0.49%) and 165 (0.91%) of those gave positive result for syphilis infection by ELISA III technique respectively. The infections with syphilis among males in 2012, 165 (0.91%) were higher than in 2010 60 (0.32%) and 2011 90 (0.49%) with significant differences ($P \leq 0.01$). The statistical analysis showed significant differences in urban than rural parts of the province. The highest infections percentage recorded was 54.60% at age groups 31-40 years, followed by age group 41-50 years which showed the percentage 20%, while the lowest infection percentage was recorded at the age groups 51-60 and 20-30 years, which was 12.38% and 13.01% respectively

Key words: Syphilis, Blood donor, blood transfusion, transfusion transmitted infection, Thi-Qar

Introduction

Sexually transmitted diseases (STDs), including acquired immunodeficiency syndrome and syphilis are a serious public health problem with a large number of cases, disease progression, and a variety of social and economic impacts on more severely affected countries(1). Syphilis is an ulcerative sexually transmitted infection (STI) that facilitates entry of infectious agents like HIV (2).

Syphilis is a systemic infectious diseases, non-immune complex, with chronic evolution, with variable clinical manifestations, "chameleon", imitating many skin problems caused by *Treponema pallidum* spp, which only affects some people and primates(3).

The primary mode of transmission is by sexual contact, and the next most common is transfer across the placenta. Kissing, blood transfusion, and accidental inoculation have also been reported as routes of transmission but are of minor importance today (4).

The risk of transmission through blood is negligible due to improved donor selection, uniform serologic testing of all blood donors, and a shift from transfusion of fresh blood to transfusion of refrigerated blood components (5).

This study was aimed to determination the epidemiology and the prevalence of Syphilis infection among male blood donors at Thi-Qar province.

Subjects and Methods

Patients: A total of 18669, 18252, and 17956 individuals referred to the central blood bank in 2010, 2011 and 2012. These patients were diagnosed at virology and venereal lab of central blood bank. The study population included males only , aged 20 to > 60 years . On the basis of their age, the patients were classified into 4 groups of 20-30, 30-40, 40-50, 50-60.

ELISA test: Serological markers of syphilis infection such as antibodies of syphilis infection were tested using commercial enzyme linked immunosorbent assay (ELISA) kit (BioElisa , Spain) according to the instructions of the manufacturer (6).

Statistical analysis:

Analysis of data was done by using of a computer with the available statistical packages for social science-version 11 (SPSS). Chi-Square (X²) were used to assess these significant differences on $p > 0.05$. (7).

Results and Discussion

The present study was revealed that out of 18669, 18252, and 17956 in 2010, 2011 and 2012 individuals from different regions of Thi-Qar province, 60 (0.32%) , 90 (0.49%) and 165 (0.91%) of those gave positive result for syphilis infection by ELISA III technique respectively.

The infections with syphilis among males in 2012, 165 (0.91%) were higher than in 2010 60 (0.32%) and 2011 90 (0.49%) with significant differences ($P \leq 0.05$) (Table 1).

Table (1): Seropositivity of syphilis infection relation to years.

Year	Total number	No. of infection
2010	18669	60 (0.32%)^c
2011	18252	90(0.49%)^b
2012	17956	165(0.91%)^a

(a : max value c :mini value)

Despite the fact that syphilis can be cured, but it increased infection rates in 2012 for what was recorded in 2010 and 2011, due to lack of awareness and frequent homosexuality.

The statistical analysis showed a significant differences ($P \leq 0.05$) between infections depending on age grade. The highest infections percentage recorded was 54.60% at age groups 31-40 years from total infections 315, flowed by age group 41-50 years which showed the percentage 20%, while the lowest infection percentage was recorded at the

age groups 51-60 and 20-30 years, which was 12.38% and 13.01% respectively ,These results are consistent with those of previous studies.8,9 (Table 2).

syphilis infection of patients.

Region	No. of infection
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Age group (years)	No. of infection
20-30	41(13.01%)^c
31-40	172(54.60%)^a
41-50	63(20%)^b
51-60	39(12.38%)^c

Table (2): Distribution of according to age group

(a: max value, c :mini value)

The results of this study showed that syphilis prevalence is higher in persons within age group (31-50) years than in older or younger persons, To the fact that most of the blood donors ranged in age from 31-50 years and the disease is difficult to diagnose because many of the signs and symptoms are indistinguishable from those that appear with other diseases. Also, many of the ulcers remain unnoticed, as does not appear in many people any symptoms for years because of the evolution of the disease situation underlying (hidden) after the end of the primary and secondary symptoms, it can show the injury again during the 10-20 years of old injury, in this case can be diagnosed the disease.

The present study confirmed that the syphilis infections vary depending on geographical region and the results of the statistical analysis showed significant differences ($P \leq 0.05$). The highest percentage of infection was at Al-Nassiriyah (65.07%) and the lowest percentage was at Al-Jebaish (6.34%) from total infections 315, as it is shown in (Table 3).

Table (3): Percentage of seropositivity infections of syphilis of five regions at Thi-Qar province.

AL-Nassiryah	205 (65.07%)^a
Suq Al-Shuykh	28(8.88%)^c
Al-Shatra	35 (11.11%)^b
AL-Rifaay	27 (8.57%)^d
AL-Jebaish	20(6.34%)^e

(a: max value, e: mini value)

The prevalence of syphilis according to the present study appears to be concentrated in geographical areas where high density like the center of the province Al-Nasiriyah. The pattern of spread of syphilis in the urban over the rural may be due to the fact that the urban's population more sophisticated and open in sexual relations unlike rural 's population who is a conservative society and a closed, confined to sexual relations only legitimate marital relations that have contributed to reducing the transmission rates of the disease in the rural community.

Syphilis is almost always passed through sexual contact. It also can be passed from an infected mother to her baby during pregnancy. *Treponema pallidum* can enter the body if you have close contact with an infected sore, normally during vaginal, anal or oral sex. It may also be possible to catch syphilis if one is an injecting drug user and shares a needle with somebody who is infected.

Conclusion

Our results have revealed that prevalent of syphilis are increased because of lack of awareness and the spread of homosexuality as a result of the openness of our society on other societies. According to our findings some blood donors are infected with syphilis (0.91%) in 2012 at Thi_Qar province.

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الانتشار المصلي لمرض الزهري (السفلس) بين الذكور المتبرعين للدم في محافظة ذي قار

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الخلاصة

أجريت هذه الدراسة بين 2010 إلى 2012، وتهدف للكشف عن وبائية مرض الزهري (السفلس) بين الأشخاص الذكور المتبرعين بالدم. المراجعين الى مركز الدم الرئيسي في محافظة ذي قار. كشفت الدراسة الحالية ان من بين 18669 شخص. 18252 شخص و 17956 شخص في عام 2010, 2011 و 2012 على التوالي. و من مناطق مختلفة في محافظة ذي قار معدل اصابة 315 حالة موجبة , 60 (0,32%) ، 90 (0,49%) و 165 (0,91%) اظهروا نتائج موجبة لمرض الزهري (السفلس) باستخدام تقنية المعايرة الامتصاصية المرتبطة بالأنزيم (الجيل الثالث). ان معدل الاصابات بالزهري بين الذكور في عام 2012, 165 (0,91%) كانت اعلى مما في عام 2010, 60 (0,32%) و 2011, 90 (0,49%) وبفارق معنوي. أظهرت نتائج التحليل الإحصائي وجود فروق معنوية بين انتشار الزهري في المدينة عن المناطق الريفية عند مستوى معنوية (P≤0.05). وكانت أعلى إصابة سجلت هي 54,60% ضمن الفئة العمرية 31-40 سنة , تبعت بالفئة العمرية 41-50 سنة حيث اظهرت نسبة اصابة 20% , بينما سجلت اقل نسبة اصابة ضمن الفئتين العمريتين 51-60 سنة و 20-30 سنة , 12,38% و 13,01% على التوالي.