Prevalence of Syphilis in Blood Donors in District Mardan Khyber Pakhtunkhwa Pakistan

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Abstract

The usual origin of transmission of infectious diseases is blood transfusion. The population of Pakistan is about 1.8 billion, and around 1.5 million bags of blood is required for transfusion annually. So, judgment of prevalence of the syphilis disease in the donors by more deep study to give a clear picture of the current circumstances for the health specialists and the blood donors which are concerned. Samples were taken from blood donors an assay named as ARCHITECT syphilis Treponema Palladium (TP) was done to detect syphilis disease. We have total 5492 healthy donors, out of which 36 were positive cases. In positive cases we found that the majority were male, so it indicates that male population are in great risk as compare to female in the region 2 (3.5%) female out of 5492 represented the population with positive result while 34 (96.5%) males out of 5492 were detected as syphilis positive. The total prevalence of syphilis disease is 0.6%. The result shows that the prevalence of syphilis is very low as compare to the previous observations, which is very strange. This low prevalence still reflects a high threat to the communal health. So, it is suggested that we can prevail this disease through public awareness moment.

Key words: Blood transfusion, blood donors, sexually transmitted diseases, syphilis.

Introduction:

Syphilis is a sexually transmitted disease triggered by Treponema pallidum, that can be transmitted through unintended direct injection, transplantation in pregnancy and hardly through blood transfusion (Vera et al.,2014; Gardella et al.,2002). Syphilis is a vital but lethal sexually transmitted disease (STD) on the top of AIDS. In the year of 1995, the assessed value of new cases of syphilis was round about 12 million amongst grownups globally, with the highest figure of cases taking place in South-East Asia and south tailed by sub-Saharan Africa (Genuis and Genuis.,2005). The upsurge of syphilis has been accredited to the variation in sexual directions, as in west the cases of syphilis are
usually stated in men having sex with men (Su et al., 2011; Ray et al., 2006). STDs are amongst the maximum reasons of infections in the biosphere and have extensive social, economic and health penalties. Typical example of STD is syphilis, which can be effectively measured by public health trials, an easy to operate and very delicate problem-solving test is accessible against extremely actual antibiotic to whom effective confrontation has not being established (Genuis and Genuis., 2005.). Mutual base for the spread of transmittable diseases is blood transfusion (Allain et al., 2009). In Pakistan, a state of populace around 1.8 billion, around 1.5 million bags of blood per annual are obligate for blood transfusion, from which 60% are given to private sector and 40% are given to public sector in the two big cities of Pakistan named Karachi and Lahore (Ghani et al., 2016). Dealing with Transfusion Transmissible Infections (TTIs) two essential facts care and defense for human life must be approved during and after blood transfusion (Tessema et al., 2010). Current position of the infection across the world is that Australia clarify 146 cases of the disease, Germany 3700, Canada 47 and UK 20 according to the annual report of 2012 [http://www.examiner.com/article/halifax-spike-syphilis-cases-linked-to-online-connections]. According to the report of previous ten years, syphilis has increased rate of infection, in the report it is stated that in 1999 rate of disease is 6.5 cases per 100,000 and in 2009 rate of infection is 24.66 cases per 100,000 (Nazir et al., 2013). World Health Organization reported that about twelve (12) million people suffer from syphilis per year in the world. The most exposed parts of body for the Treponema Palladium are oral and genital mucous membrane (French., 2011). Transfusion transmitted infections (TTIs) are main co-existent for health and humankind in Pakistan, but the exact load is still unknown, because of these main hurdles, deprived use of screening test or their price rang is very high, lack of awareness, absence of examination structure and due to its indefinite nature and limited access to a health facility. The ratio of prevalence in such type of diseases across the world is becoming lesser due to awareness in people while in Pakistan it is still in the list of high mortality and morbidity rate (khan et al., 2007; Shah et al., 2011). So therefore, high screening of blood is required for TTIs to make sure safety of blood and blood products used in the process (Bhawani et al., 2010).

Hence, we carried out this study to find out prevalence of Syphilis in blood donors in district Mardan Khyber Pakhtunkhwa Pakistan.

The aim of this study was to kept an eye on the spreading over rate of syphilis (VDRL) in the mentioned areas of KPK, Mardan and its surrounding areas. Before such study was not done on these particular disease, and also the study was done in Peshawar and but not much study was done in the adjacent areas of Khyber Pakhtunkhwa. Another factor was the results came with the blood donor and by chance through test pre- transfusion of blood the results were positive for the particular disease. Syphilis are very dangerous disease dispersion very fastly in developing and underdeveloped countries especially in Asia. To explore the rate of these diseases to inform the common people who are un-aware of the signs and symptoms and to start treatment on time to overcome this dangerous disease.

Materials and Methods:
Study area:

The present case study was done on an Mardan (KPK) named Mardan medical complex Mardan during demonstrational and observational study carried out from December 2017 to May 2018, (duration of 6 months).

Fig. Map of Mardan
Sample and data collection:
A total of 5,492 samples were collected and screened for the detection of syphilis among the blood donors by using ARCHITECT plus i1000SR syphilis

Data analysis:
All the tables were generated using MS word 2016. The data recorded and put in tabular form.

Results:
There were 5,492 blood donors, age ranging from 18-45 years, male with a ratio of 96.5% (5300) and female with a ratio of 3.5% (192) came to Mardan Medical Complex, Mardan, 36 were found to be syphilis positive in which the prevalence ratio was 0.68%. In males, the prevalence ratio was 94.4% (34) and in females the prevalence ratio was 5.5% (2) Table 1.

<table>
<thead>
<tr>
<th>Table 1: Prevalence ratio based on gender</th>
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<tbody>
<tr>
<td>Total No</td>
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<td>----------</td>
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<tr>
<td>5,492</td>
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Discussion:
In Pakistan Syphilis, has not been a rare disorder and it has been transmitted to offspring by sexual intercourse with the sexual partner (Hussain et al.,2000; Hussain and Ranjha et al.,1999). The transfusion of blood is familiar in Pakistan hereafter the transmittable and infectious microbes transfer from one person to another easily. 0.6% of blood donors, which are detected as syphilis responsive, can pass this disease with no trouble to the healthy people if they remain untreated. According to the study it is believe that male population is infected much more in comparison to females. Occurrence of syphilis (0.6%) in Mardan males (96.5) and females (3.5%) is much less than Punjab. This is low occurrence is because of awareness in the people living here, also this lower value indicates that the homosexuality in Pakistan and especially Khyber Pakhtunkhwa is very less common. Along with these Islamic practices can play its role such as cleanliness. Another factor can be, the lower ratio of sex rape and other sex practices with eunuchs and other bar girls. Punjab population contain (3.1%) of syphilis, which in turn is greater than the Indian population which contain (1.7%) of syphilis in common (Sgaier et al.,2010). In China, the detected occurrence is 0.47% in the blood donors from 2000-2010 (Li et al.,2012) [16]. If we compare our occurrence value with the value found in China, so it is much more threatening for Pakistan because the current value (0.6%) is showing us the occurrence in Mardan rather than Pakistan. In current days a syphilis disease prevalence is 5.7% in the group of blood donors of Edea, Cameroon (Noubiap et al.,2013). According to survey performed by National Aids control Program in Lahore and Karachi about 60% shemale(eunuchs) are infected of the disease and 36% are male infected population. In Karachi about 13.1% are infected of syphilis which are injection drug users, so it shows that male and eunuchs which use drugs in dose form are the basses of infection in population (Shah et al.,2011). Regarding infection of Syphilis the rate of prevalence in Pakistan is very low as compare to cities of other countries like London: 14/100,000 inh, New York: 130/100,000 inh (Platt et al.,2013; Fenton & Imrie.,2005; Celum.,2010). Although comparing with Spain our prevalence ratio is 3.5 times higher for syphilis (Díaz et al.,2012).

Conclusion:
Though our results have shown less occurrence of syphilis but still seroprevalence and occurrence studies of the general population are required to find the true and absolute occurrence of these infected markers. The possible way to stop infections in healthy population is to track the basic biosafety guideline and increase awareness in the public. Together with this basic health care centers must be established by the government having all the facilities, trained staff and quality tools in all remote areas.

References:


