

## EPIDEMIOLOGICAL STUDY FOR PREVALENCE AND INCIDENCE OF SYPHILIS AMONG BLOOD DONORS IN THI-QAR PROVINCE

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**ABSTRACT :** To find out the prevalence of *Treponema pallidum* among the blood donors aged from 20-75 years, at the main blood bank in AL-Nasiriya and blood banks of Suq AL- Shiok, Refaei and AL-Shatra, a total of 28287 blood donors were analyzed during the period from the beginning of April / 2016 to the end of March / 2017 in epidemiological study for this purpose. Results showed that from 28287 bloods volunteer groups 200 cases were discovered infected with syphilis disease. Among this 94.5% (189) were male and 5.5% (11) were female with ratio 17:1. Socio-demographic characteristics the donors; majority were illiterates 42.5% (85), 1-6 37.5% (75), unemployed/ jobless 139 (69.5%), governments 35 (17.5%), merchants 12 (6%), farmers 11(5.5%), students 3(1.5%). It was found that married were more infection than unmarried with a percentage of 77% (154) married vs 23% (46) unmarried. The ABO profile of the participants were 92 (46%) O, 64 (32%) A, 33 (16.5%) B and 11 (5.5%) AB. These findings demonstrate that screening for syphilis may still retain certain value in Thi-qar governorate and should be considered in other governorates in Iraq, depending on their blood donors' epidemiology data.

**Key words :** *Treponema pallidum*, syphilis, epidemiology, blood donors.

### INTRODUCTION

Syphilis remains a global problem, is a chronic and multi-stage disease which is transmitted both sexually and from mother-to-child and can result in multisystem injury by invading nerve, skeleton, skin, mucous membrane, angiocarditis and can result in abortion, stillbirth and congenital syphilis fetus. Besides, syphilis has synergistic action with HIV and can promote HIV infection (Tipple *et al*, 2015; Han and Dai, 2015). Syphilis is a sexually transmitted disease (STD) caused by *Treponema pallidum*, which can also be transmitted via accidental direct inoculation, transplacenta during pregnancy and rarely, via blood transfusion (Van Dyck *et al*, 2004). It is a systemic infectious disease, non-immune complex, with chronic evolution, with variable clinical manifestations, "chameleon", imitating many skin problems caused by *T. pallidum* which only affects some people and primates (Behets *et al*, 1996).

Globally, more than 81 million units of blood are donated each year. More than 18 million units of blood are not screened for transfusion-transmissible infections. According to World Health Organization (WHO), in the year of 2006 only 38 countries were collecting more than 75% of their blood supplies from families, the rest obtained it from professional blood donors on payment (WHO, 2008). In many parts of the world, the incidence

and prevalence of syphilis still remain high in both volunteer and family/replacement blood donors (Ji *et al*, 2013; Noubiap *et al*, 2013). There are numerous reports in high-risk groups in the literature, both from developed and developing countries, indicating rising prevalence and incidence of syphilis (Hao *et al*, 2011; Muldoon and Mulcahy, 2011). For example, in Pakistan, there are approximately 100,000 patients of thalassemia major with their lives totally dependent on blood transfusions (Ishfaq *et al*, 2013). Hussain *et al* (2015) stated that among 48020 blood samples 94.08% were found free from infection and therefore safe for transfusion. While 5.92% blood donations were infected with one or another infectious agent. Among infected blood donors, *T. pallidum* (TP) exhibited prevalence of 0.07%. Vera *et al* (2014) reported that the prevalence of syphilis was 47 : 100,000, similar in men and women and increased significantly with age.

Among blood donors allows for assessment of epidemiology of this infections in the community (Bhattacharya *et al*, 2007). The acquisition of the infections in the healthy blood donor population can be a serious threat to safety of the collected blood donations. The present study was conducted to determine the prevalence of *T. pallidum* (TP) among blood donors in Thi-qar province, Iraq during the beginning of April / 2016 to the end of March 2017 and reveal the epidemiology of