

Review Of “Prevalence of Transfusion-Transmissible Infections Among Voluntary Blood Donors in Tertiary Health-Care Facility in Islamabad, Pakistan”

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ABSTRACT

This contribution conducts a mini review of the paper: “Prevalence of Transfusion-Transmissible Infections among Voluntary Blood Donors in Tertiary Health-Care Facility in Islamabad, Pakistan”, written by Fariha M Siddiqui, Niaz Ahmed, Olasunkanmi Oluwatayo, Sadia Jabeen, Syed Mehmood Qadir, Sajjad A Khan, Sajjad Hussain, Roohullah and Abdul Sattar (2019) and published in Journal of Clinical Trials, Longdom Publishing SL.

The article in question suggests that Transfusion-transmissible infections are the major risk factors for the transmission of infectious agents through blood transfusion in asymptomatic donors. This study was designed by taking into account for the seroprevalence and risk factors responsible for Transfusion Transmissible Infections (TTIs) in blood donors in Islamabad, using a tertiary health-care center.

Based on 847 blood donors, at health care facility from 1st November 2016 to 31st October 2017, detection of TTIs in the serum samples of the donors by Immunochromatographic assay kit and chemiluminescence immunoassay generated the result that TTIs appears to be lesser among controlled blood donors. This is particularly important as it will be useful in arranging public wellbeing mediations against TTIs.

Keywords: Transfusion Transmissible Infections (TTIs), Hepatitis, HIV, Syphilis, Malaria

INTRODUCTION

In new health amenities, blood transfusion is an essentially lifesaving move. With this situation healthy donor collation is the basis of transfusion medicine [1].

Transfusion-transmissible infections, human immunodeficiency infection, hepatitis B infection, hepatitis C infection, and syphilis are among the top dangers to blood safety and represent a genuine general medical issue. High prevalence of these infectious diseases increases the risk of blood safety around the world most especially in middle- and low-income countries [2]. Hence, an endowment for strict measures in enlistment and suspension of blood donors, mainly giving emphasis to transfusion transmissible infections (TTI), may improve safe transfusion practice.

REVIEW

The study by Siddiqui FM et al 2019 was conducted for one-year duration, 1st November 2016 to 31st October 2017. By doing random consecutive sampling, 847 prospective donors were screened. Data collection was done by well-structured questionnaire. Laboratory testing was done by Sandwich Immunoluminometric assay technique and rapid

immunoassay technique. Data analysis was done by R Studio version 1.1.462 which generated descriptive statistics.

The study showed the prevalence rate of 3.72% of TTIs among blood donors. This rate is quite low in comparison to a study in Nigeria, a lower middle-income country like Pakistan where prevalence rate of 14.9% was recorded [3]. However, in Nigerian study, eleven years evaluation was done for TTIs prevalence. Present study's prevalence rate is also lower than 14.1 % recorded by a recent study from Kenya [4], again a lower middle-income country. Study conducted at Kenya was 3 months cross sectional one.

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Current study's rate of prevalence is slightly higher than recently reported of 2.17 % (average prevalence rate of 5 years in cross sectional study) from Qatar [5], a high-income country. The basic difference of that study was inclusion of HTLV-I/II screening and use of Nucleic Acid Amplification test (NAT) for HBV and HCV confirmation.

This 3.72% rate is lower than a prospective cohort study done at Karachi, Pakistan which reported a TTIs prevalence rate of 5.8% [6]. However, prevalence of HCV and HBV 1.77 and 1.29 % is comparable to that study where 1.8 and 1.7% rate was reported. The rate of HIV (0.24%) and malaria (0.11 %) are higher than reported by that study i.e. 0.04% and 0.07% respectively. Whereas, prevalence of syphilis (0.35%) was lower than that reported by that study. In present study, most of the donors were replacement blood donors i.e., 95.30 % which is comparable with that local study in which majority of blood donations were contributed by replacement donors. The recipients could also be at the risk of Creutzfeldt Jacob disease (CJD) transfusion related disease and there is no tool to screen the donors. But according to a study if transfusion transmission occurs at all, it is very rare [7]. Cytomegalovirus (CMV) is most common in low weight preterm and bone marrow transplants. This is one of the diseases which cannot be screened. These can be prevented by taking measures like transfusion of leucocytes Depleted products and by designing studies which cover more patients with CMV [8]. However, a recent metagenomics-based study from south western China reported high frequency of CMV, *Toxoplasma gondii* and *E. coli* among healthy donors [9].

Variations in results may be due to the fact that current study's sample numbers were low as compared to that of the previous studies, blood donors may not represent the general population as the prevalence rate may be underestimated or overestimated due to their different characteristics. Our study doesn't cover low birth weight babies and bone marrow transplant recipients. So more efficient tools should be introduced for screening of pathogens like CMV and other viruses in healthy looking donors and instead of whole blood transfusion leucocytes depleted products should be transfused.

CONCLUSION

The limitations of this study are that responses of donors could not be verified and all TTIs including leishmaniasis, toxoplasmosis, HTLV-I/II, CJD and CMV have not been covered. According to this research study TTIs is lower in young volunteer donors. Study should involve large number of populations. TTIs appears to be lesser among controlled blood donors. This is important as it will be useful in arranging public wellbeing mediations against TTIs. In blood bank processing it will be helpful in reducing the risk of transmission to very low level.

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