Seroprevalence of cytomegalovirus among blood donors at a tertiary care hospital in Puducherry, India. Is testing donated blood for cytomegalovirus a viable option?

Sir,

In India, screening the donated blood for infections is mandatory for human immunodeficiency virus, hepatitis B, hepatitis C, malaria, and syphilis, but not for cytomegalovirus (CMV). Studies have shown a high seroprevalence of CMV (up to 95%) in India and CMV can cause severe morbidity in susceptible individuals such as immunosuppressed patients and neonates.[1] Hence, providing a CMV-negative blood unit by screening for CMV and having a donor database of seronegative donors assumes importance in this setting.

Our center being a tertiary care hospital has all the facilities required for organ transplants. We undertook this cross-sectional study to know the seroprevalence of CMV among our donor population and also to know the feasibility of maintaining a seronegative database for providing CMV-negative blood to such patients.

We screened 1475 samples (as per sample size calculation) collected randomly from the donors at our institute by using "E-CVG-K01" IgG ELISA test kit by Ratio Diagnostics. Among the 1475 samples tested for CMV, 1329 were seropositive and 146 samples gave a negative reaction. Hence, the seroprevalence of CMV among our donor population was 90%.

This was matching the seroprevalence noted in a study from Jordan.[2] A study by Kothari *et al*. from Delhi also showed an almost similar result around 95%.[3]

Due to the high seroprevalence of CMV in our region (90%) and also the logistics involved, maintenance of a seronegative database is a painful endeavor which is not rewarding. Another problem which is encountered in the maintenance of a CMV seronegative database is that there is a high rate of seroconversion among previously seronegative individuals.[4] Hence, frequent screening and updating of data will be required.

Considering the prevalence of 90%, testing 100 samples would yield 10 CMV negatives, amounting to an approximate expenditure of INR 30,000/- (by ELISA with five calibrators and each sample run in duplicate). In the blood of CMV-seropositive individuals, viral DNA may be present in peripheral leukocytes, and this can cause transfusion-associated infection. Leukoreduction using standard filters will help to decrease this risk.[5] Leukofiltering 10 bags will cost only Rs. 10,000 (commercially available filters cost around 800–1400 rupees), i.e., one-third of the expense for testing for CMV. Thus, a more economical and practical idea would be to implement leukoreduction for the bags to be transfused to CMV susceptible individuals.

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Conflicts of interest

There are no conflicts of interest.

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