Circulating Phage Type of *Vibrio cholerae* in Mysore

Dear Editor,

Cholera is an important public health problem in India. Bacteriophage typing is a convenient and highly discriminatory method of identifying epidemic strains of *Vibrio cholerae*. Constant monitoring of the prevalent phage types in an area is important as introduction of a new phage type may herald the onset of an outbreak.[1]

A total of 14 strains of *V. cholerae* were isolated from 56 stool samples received from patients with acute diarrhoea who were admitted to the K.R. Hospital, Mysore Medical College and Research Institute, Mysore, between 2 May 2007 and 30 June 2007. The isolation was carried out using standard laboratory techniques at the Department of Microbiology, Mysore Medical College and Research Institute, Mysore.

Alkaline peptone water was used for the preliminary enrichment of vibrios from the faeces. All the samples were plated onto MacConkey agar, blood agar and TCBS medium.[2] The suspected colonies were subjected to Gram stain, oxidase, motility and string tests. The Gram negative rods that were oxidase positive, actively motile and string test positive were subjected to further biochemical tests.[3] These were indole, triple sugar iron agar, cholera-red reaction, ornithine decarboxylase, lysine de Caryoxyrase, arginine dihydrolase and sugar fermentation tests using sucrose, mannitol, arabinose and mannose.[2] Biotyping was performed by the Voges–Proskauer test, chick red cell agglutination test, sheep RBC haemolysis test and Polymyxin-B (50 unit disc) sensitivity test.[3] Serotyping was carried out by slide agglutination using Ogawa and Inaba antisera.[2] All the 14 isolates belonged to the *V. cholerae* ElTor biotype and Ogawa serotype.

These isolates were confirmed at the National Institute of Cholera and Enteric Diseases, Calcutta, for confirming and phage typing the *V. cholerae* isolates.

In the present study, one isolate each (7.14%) belonged to type 23, type 25 and type 21. Of these, one was an imported one (T-23 was isolated from a 6-year-old girl from Nanjangud, situated outside Mysore). The new scheme was thus more discriminatory and could identify four circulating phage types when compared with a single phage type identified by the Basu and Mukherjee scheme.

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**References**


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**Table 1: Results of phage typing obtained with the 14 *V. cholerae* 01 ElTor strains**

<table>
<thead>
<tr>
<th>Number of <em>V. cholerae</em> positive (%)</th>
<th>Basu and Mukherjee</th>
<th>New scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 (78.58)</td>
<td>T2</td>
<td>T27</td>
</tr>
<tr>
<td>1 (7.14)</td>
<td>T2</td>
<td>T21</td>
</tr>
<tr>
<td>1 (7.14)</td>
<td>T2</td>
<td>T25</td>
</tr>
<tr>
<td>1 (7.14)</td>
<td>T2</td>
<td>T23</td>
</tr>
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</table>

The majority of the isolates belonged to type 27 (78.58%, i.e. 11 isolates). The pattern of phage typing nearly coincides with that of a study reported by Gupta *et al.* (79.69%, 51 isolates) in the year 1999.[4] Thus, T27 is the predominant phage type reported from studies in Bikaner[4] and Mumbai,[1] as in the present study.
than 90% of the donors were males in the age group of 20-45 years. A total of 55 blood donors (0.40%) were seropositive for HIV infection ranging between 0.07% and 0.99%, showing a peak in 2004 [Table 1]. HIV seropositivity has ranged from 0.50% (2007) to 0.64% (2005) among replacement donors and from 0.33% (2005) to 0.49% (2004) among voluntary donors. The \( \chi^2 \) test was used to statistically analyse data. HIV seropositivity was found to be significantly higher in replacement donors (\( P < 0.05 \)).

The syphilis seroreactivity varied from 0.3% (2006, 2007) to 0.82% (2004) among replacement donors and from 0.09% (2007) to 0.4% (2004, 2005) among voluntary donors during the study period. The seropositivity for syphilis was also significantly lower in voluntary donors than in replacement donors (\( P < 0.001 \)).

The RPR reactivity showed a decreasing trend in both voluntary and replacement donors between years 2004 and 2007. The HIV seroprevalence among paid and voluntary blood donors in New Delhi increased from 0.10% and 0.01%, respectively, in 1991[4,5] to 0.33% among blood donors in 1994. [6] However, in our study, the seropositivity for both HIV and syphilis has shown a declining trend over the study period. This is particularly possible considering the similar mode of transmission of both.

This study documents that seropositivity for HIV and syphilis was significantly higher in replacement donors. Based on these results, we feel that to reduce the risk of these infections non-remunerated repeat voluntary blood donor services are needed. Extensive donor selection and screening procedures can improve the blood safety.

Dear Editor,

Transfusion of blood and blood products is a life saving measure that benefits numerous patients worldwide. At the same time it is an important mode of infection to the recipients. In up to 15% of the total patients infected with human immunodeficiency virus (HIV), blood transfusion has been the route of transmission. Syphilis positivity varies from 0.8% in voluntary donors to more than 15% in paid commercial donors.[1] Although HIV infection has been reported in all groups of blood donors in Delhi, it is particularly high among replacement donors.[2] Concealing the medical history by professional or replacement donors pose a great threat to safe blood supply. Problems are also due to the prevalence of asymptomatic carriers in the society, blood donations during the window period, genetic variability in the viral strains and laboratory errors. Only few reports are available regarding the trend of HIV seropositivity and syphilis serology, particularly in blood donors from northern India.[3] In this study, we aimed to assess the prevalence and trend of HIV and syphilis over 4 years, 2004-2007, among blood donors of Central Delhi. A total of 13,672 blood units were collected from blood donors during the period from January 1 2004 to December 31 2007 at the blood bank of Delhi Heart and Lung Institute in New Delhi, India. This is a tertiary care level hospital super specializing in heart and lung ailments. Blood donors were either replacement or voluntary. Care was taken to exclude professional donors by taking appropriate history and examination.

All 13,672 serum samples were screened for HIV 1 and 2 and syphilis reactivity. HIV was screened using a third generation enzyme-linked immunosorbant assay kit biokit Bioelisa (Werfen Group, Barcelona, Spain, HIV 1 + 2 rec) with reported sensitivity and specificity of 100% and 99.98%, respectively. Syphilis serology was tested using the rapid plasma reagin (RPR) card test from (Tulip Diagnostics, Goa, India). Because of several constraints, positive cases of syphilis serology could not be confirmed using TPHA, which could have probably led to the avoidance of false positives.

Of the total 13,672 blood donors, 13,198 (96.53%) were replacement and 474 (3.46%) were voluntary donors. More...