Transfusion Transmitted Infections in Armed Forces: Prevalence and Trends

Dear Editor,

I read with interest the article 'Transfusion Transmitted Infections in Armed Forces: Prevalence and Trends' [1]. Authors have reported that sero-positivity for anti-HCV antibodies in voluntary donors is decreasing ($p < 0.05$) while in replacement donors there is an increase ($p > 0.05$). We observed a similar trend at our transfusion centre (Table 1). Even if statistically valid, this interpretation may not be correct as the overall positivity is less than 1% while the manufacturer proclaimed specificity of the enzyme-linked immunosorbent assay (ELISA) kits in use was less than 99% (anticipated false positivity $> 1\%$). For example the specificity of the ELISA kit Zhongshan HCV, as claimed by the manufacturers (Zhongshan Biotech Co. China) is 98.5%, suggesting a possible false positivity of 1.5%. Specificity of HCV Micro - Elisa (J Mitra & Co. India) as tested by World Health Organisation (WHO) panel is 97.4%, and of HCV Comb - Rapid by in-house panel (J Mitra & Co. India) is 99.8%.

In a study from Mexico [2], anti-HCV prevalence by ELISA in accepted (Group A) vs deferred (Group B) blood donors was 0.61% and 1.32% respectively, whereas with recombinant immunoblot assay the prevalence was 0.19% for Group A and 0.47% for Group B. When analysed by polymerase chain reaction, the prevalence in Group A was 0.10% and in Group B was 0.47%. These data amply highlight the false positivity in anti-HCV testing. It is a wise precaution to discard anti-HCV positive blood in blood transfusion practice, however this data is not a true indicator of the prevalence of HCV infection in the population.

The observed gradual decline in the prevalence of anti-HCV positivity in the armed forces population without any active intervention can be better explained by gradually improving specificity of the test kits. Varying specificity of the testing systems may also be responsible for wide variation in the reported prevalence of HCV infection in India ie from 0.01% to 4.8% [3-5]. This correction may also be relevant to the observed decline in the prevalence of other transfusion transmissible infections.

It may be desirable to have a reference centre for transfusion transmissible infections for the armed forces at Department of Blood Transfusion, Armed Forces Medical College (AFMC), where all anti-HCV positive samples may be forwarded for further testing

Reply

It is interesting to know that there is a similar decrease in sero positivity for anti-HCV antibodies among voluntary donors in other transfusion centres of Armed Forces. I agree with the reader that the observed gradual decline in the prevalence of anti-HCV antibodies positivity, without any active intervention may be due to use of ELISA kits with high specificity or it may be due to the preventive measures undertaken for transmission of the disease. In the blood banks, anti-HCV antibodies tests are being done by ELISA methods only, which is a screening and not a diagnostic procedure. The reported positivity may be slightly higher than that reported

by more specific methods to know the true prevalence of the infection in the armed forces.

Table 1

Prevalence of anti-HCV antibodies in healthy blood donors

Year	Prevalence in blood donors		
	Tested	Positive	Prevalence (%)
2001	1346	6	0.44
2002	1103	3	0.27
2003	874	7	0.80
2004	781	1	0.12
2005	991	1	0.10
2006 (upto 14 Nov)	664	1	0.15

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in advanced centres of western countries where nucleic acid amplification testing is done as a routine.

It is desirable to have a reference centre for Transfusion Transmissible Infection (TTI) at AFMC, where all positive samples of the blood banks can be tested centrally by more specific techniques, to know the true prevalence of the disease.

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