The feeble antigen "Weak D": Prevalence in a tertiary care hospital blood bank in Mumbai

Sir,

Transfusion services require donor blood to be tested for weak expression of D. The goal is to avoid transfusion of D-positive red cells including those with weak D or partial D antigens to D negative recipients. In this 5½ year study, we estimated the prevalence of weak D using serological techniques. Among a total of 84,697 units of blood, 4541 (5.36%) donors were Rh negative and 38 (0.8% of Rh-negative donors) were weak D positive. Of 4541 Rh negatives obtained, 3506 donors were tested for weak D by conventional tube method in which 34 donors (0.9%) were detected weak D positive. 1035 Rh negative donors were subjected to weak D testing by using gel cards in which only four donors (0.3%) were detected weak D positive. This was not found to be statistically significant ($P = 0.08$).

The main concern for testing for weak D is the risk of alloimmunization among recipients. Since D antigen is highly immunogenic, individuals with weak D phenotype are designated as D positive. Patients with weak D are considered D negative and must be transfused with D negative blood. Since the passage of weak D cells from fetus to the mother may cause sensitization, mothers with weak D fetus must receive Rh immunoprophylaxis.[1]

The incidence of weak D is higher in our study as compared to other Indian studies where the incidence is in the range of 0.09–0.189% which could be due to geographic variations.[2-4] Our results obtained are representative of entire Mumbai and Thane regions.

Further studies such as genomic DNA studies and nucleotide sequencing of transcripts would be required to identify the actual reason for weak expression of D, i.e., either a gene rearrangement, point mutation, or altered transcriptional activity of the RHD gene.[5]

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Conflicts of interest
There are no conflicts of interest.

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