Correspondence:
The prevalence of A\textsubscript{2} and A\textsubscript{2}B subgroups in blood donors at a tertiary care teaching hospital blood bank of Rayalaseema region: a pilot study

Polymorphisms in the genes coding for A gene leads to subgroups of A. No published data regarding the prevalence of subgroups of A blood group in Andhra Pradesh, India is available. The importance of subgrouping is that the A antigens in various subgroups may differ both quantitatively and qualitatively\textsuperscript{1}. Some individuals with blood groups A\textsubscript{2}, A\textsubscript{3}, A\textsubscript{a}, A\textsubscript{ai}, A\textsubscript{B} etc., have anti-A\textsubscript{1} antibodies and may present problems in blood grouping.

At our center, the typing of A subgroup of all blood donors was done using commercial anti A\textsubscript{1} lectin, anti-A and anti-AB antisera as per the manufacturer’s instructions. On analysis of a total of 5,505 blood groupings over a period of one year, 1,486(27\%) individuals had A antigen. Of these, 1,137 (20.7\%) were typed as A group and 349 (6.3\%) as AB group based on the presence of associated B antigen. Of the 1,137 A group individuals, 1,090(95.9\%) had A\textsubscript{1} antigen (subgroup A\textsubscript{1}) and the rest 47(4.1\%) had no detectable A\textsubscript{1} antigen (subgroup A\textsubscript{2}). Similarly among the 349 AB group individuals, 282(80.8\%) had A\textsubscript{1} antigen (subgroup A\textsubscript{1}B) and 67(19.2\%) had no detectable A\textsubscript{1} antigen (subgroup A\textsubscript{2}B). The number of individuals who lack A\textsubscript{1} antigen is less among A group individuals in contrast to AB group individuals and this difference was found to be statistically significant (p<0.0001). This may be due to the recessive nature of A\textsubscript{2} gene compared to A\textsubscript{1} gene and requirement of a single A\textsubscript{2} gene and a B gene to develop as A\textsubscript{2}B blood group phenotypically and two A\textsubscript{2} genes or one A\textsubscript{2} gene and one O gene to develop as A\textsubscript{2} blood group. Some postulate the presence of a strong B gene that would suppress A\textsubscript{1} antigen activity.\textsuperscript{2} No other subgroups of A could be detected in the present study due to the small number of donors phenotyped for subgroups of A. Similar results were obtained in other studies from Karnataka\textsuperscript{3} and Japan.\textsuperscript{4} By including a much larger population, the frequency of other A subgroup antigens can also be estimated. In the present study, the prevalence of A\textsubscript{2} and A\textsubscript{2}B sub groups was found to be 0.85 percent and 1.21\% in blood donors respectively.

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