Correspondence:

The prevalence of A₂ and A₂B 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 qualitatively¹. Some individuals with blood groups A₂, A₃, A_x, A_{el}, A_{end}, A₂B etc., have anti-A₁ 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 A₁ 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 A₁ antigen (subgroup A₁) and the rest 47(4.1%) had no detectable A₁ antigen (subgroup A₂). Similarly among the 349 AB group individuals, 282(80.8%) had A₁ antigen (subgroup A₁B) and 67(19.2%) had no detectable A₁ antigen (subgroup A₂B). The number of individuals who lack A₁ 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 A₂ gene compared to A₁ gene and requirement of a single A₂ gene and a B gene to develop as A₂B blood group phenotypically and two A₂

genes or one A₂ gene and one O gene to develop as A₂ blood group. Some postulate the presence of a strong B gene that would suppress A₁ antigen activity.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 Karnataka³ and Japan.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 A₂ and A₂B sub groups was found to be 0.85 percent and 1.21% in blood donors respectively.

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