Chandimal, K.M., Wickckramarachachi, Ayurveda Institute , University of Kelaniya
S.G. Yasawardene, Faculty of Medical Sciences, University of Sri Jayewardenapura
G. Adikari, Postgraduate Institute of Archaeology, University of Kelaniya

Paper: Diversity

The distribution of ABO and Rhesus (Rh) blood groups in purana inhabitants of Sigiriya, Sri Lanka

The ABO blood group system was discovered in 1901, and since then, has been of major importance in medicine. Racial and ethnic differences in blood type and composition are documented. The frequency with which blood types are observed is determined by the frequency with which the alleles of the ABO gene are found in different parts of the world. The blood type purity depends on migration, diseases, inter-relational reproductive opportunity, traditions and customs, geography, and the initial assigned blood type.

The purana population in Sigiriya who face imminent threat of extinction, trace their ancestry to the times of the Sinhalese King of the 5th Century A.D. This study was carried out to determine the distribution of ABO and Rh phenotype in purana inhabitants of Talkote, Diyakepilla, Alakolaweva,Pidurangala, purana villages at the foot of Sigiriya rock. One thousand and ten purana inhabitants belonging to purana pedigree were included in this study and those who belong to other pedigrees were excluded. The individual selection was based on verbal pedigree analysis and pedigree was traced back to at least three generations. Capillary blood was used to determine the individual blood group by using commercially available anti A, anti B, anti D antibodies.

More than 98% of purana population showed Rh positivity while the distribution of O, B, A, and AB phenotypes were 55%, 32%,10% and 03% respectively. The percentage distribution of blood group phenotype O of purana population is higher than the reported values of Sinhalese-45%, Tamils-39%, Muslims-42% and Burghers-45% in different racial groups in Sri Lanka, reported by N.S De Zoyza in 1985. The reported value of blood group O in vedda group is 47% according to Weber 2005, while the Australian Aborigines being 61% (World Blood Bank record). The percentage value of blood group phenotype A is comparable with the values of Veddas (9.8%) reported by Weber 2005 and this is contrasting with other racial groups in Sri Lanka, value being of more than 20% of each population. The percentage of phenotype A in purana inhabitants in Sigiriya is comparable with the Sakai (Malaysia), Nicobarese (Nicobars) primitive groups in Southeast Asia reported by Weber 2005. The percentage value of AB phenotype of purana inhabitants of Sigiriya is comparable with the Vedda group in Sri Lanka being 2% and Khmer (Combodia) primitive groups in Southeast Asia reported by Weber 2005. The blood group distribution of purana inhabitants confirms their isolated nature with minimum migration, inter-relational marriages and reproductive opportunity.

Keywords: Purana inhabitants, ABO and Rh blood groups