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Identification of associating determinants and *IL-6* gene polymorphism for low platelet count in apparently healthy population of upper Assam, India

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Evidences on effect of aging and gender-wise variation in platelet count are available. However, data on ethnicity-wise platelet count variation at the same geographical location is inconsistent. The distribution of MPV and association of single nucleotide polymorphism of *IL-6* gene for low platelet count are also not adequately known. The present study incorporates collection of intravenous blood samples from healthy volunteers for obtaining the CBC profile. Genomic DNA was isolated for determination of (G/C) genotype of *IL-6* gene at position -174 by ARMS-PCR and results were validated further by RFLP analysis. Among the 510 individuals (age 14-65 years), 25.3% had low platelet count (96.53±24.79 x 103/µl of blood). Females were found to have higher platelet count as compared to their male counterparts. Age-wise count variation was also observed in the study population. However, it was found significant in female ($p<0.001$) than male. The MPV values were higher in low platelet count group (11.47±1.47 fl) than that of normal platelet count group (10.81±1.86 fl) illustrating the compensatory effect of size for low count. Ethnicity-wise variation in platelet count and MPV was also observed. Heterozygous (GC) genotype of *IL-6* gene was identified in 8 cases of low platelet count group. The study indicated one fourth of the population with low platelet count despite being healthy and factors viz. age, sex, ethnicity and MPV are the important determinants in evaluation of count variability. Polymorphism of alleles for *IL-6* gene at -174 was also found associated with low platelet count though investigated in few cases.

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