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Determination of rheumatoid factor profile and its associations with clinical manifestations and socio economic factors of rheumatoid arthritis patients in Sri Lanka

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Gaining insights into immunological and socioeconomic aspects of rheumatoid arthritis (RA) are of key importance in the proper management of the disease. A case control study was undertaken to assess the rheumatoid factor (RFs) profile and to sort associations with serum immunoglobulins, clinical manifestations, and to study the socio-economic status of RA patients in Sri Lanka. The study cohorts consisted of seropositive (+RF) RA (N =100), and age-gender matched seronegative (-RF) RA (N = 57) and osteoarthritis (OA) (N =30) patients from the National Hospital, Sri Lanka. Age-gender matched normal healthy individuals (NH) served as controls (N = 30). Modified indirect ELISAs were established to assay serum RFs (IgM-RF and IgG-RF). Socio-economic factors and clinical manifestations were accrued via an interviewer - administrated questionnaire. A significantly higher level of IgM-RF was evident in +RF sera than in the control cohorts (ANOVA; $P<0.05$). The magnitude of IgG-RF of +RF patients was significantly higher than in OA patients and NH controls (ANOVA; $P< 0.05$). The magnitude of IgG-RF of +RF patients was significantly higher than the OA and NH cohorts (ANOVA; $P<0.05$). +RF, -RF and OA disease specific correlation matrices of serum RFs and immunoglobulins were evident for the first time in Sri Lanka. Gender was not significantly associated with the level of IgM-RF and IgG-RF of the +RF patients (Mann-Whitney U test; $P > 0.05$). A significant correlation was evident between IgM-RF and erosions of the +RA cohort (Pearson's correlation coefficient; $P< 0.05$). A significant inverse correlation was demonstrated between IgG-RF and erosions in the –RF cohort (Pearson's correlation coefficient, $P < 0.01$). Proportions of +RF patients with nodules and erosions were significantly higher than their negative counterparts (Chi-square test; $P<0.05$). The proportion of individuals with positive family histories in the +RF cohort was significantly higher than the control cohorts (Chi-square test; $P<0.05$). A positive family history imposed a relative risk of 4.647 for developing +RF RA. A history of manual working enforced a

relative risk of 4.027 and 3.95 for developing +RF RA and -RF RA, respectively. The results of this study would contribute to fill the existing knowledge gap of RA in Sri Lanka.

Acknowledgement: University of Colombo

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