

Genetic and Epidemiological Risk Factors in the Etiology of Arthritides

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ABSTRACT Arthritis is a multifactorial disease that results from interactions between genetic and environmental factors. Three types of arthritis have been considered in our study – juvenile rheumatoid arthritis, rheumatoid arthritis, and osteoarthritis. The present study was envisaged to investigate the genetic and epidemiological risk factors predisposing to arthritides in Indian subjects. Arthritis patients and healthy individuals matched for age and sex were considered for the study. A significant deviation from 1:1 sex ratio was observed in all the three types of arthritis with preponderance of female arthritis patients. Predominance of arthritis in females suggests the role of hormonal factors. Frequency distribution of age at onset in familial cases showed that arthritis had an early onset of the condition. The segregational analysis and Penrose relative frequency analysis were found to follow a multifactorial mode of inheritance. The observations could pinpoint that sex variation, age at onset and familial history are some of the epidemiological factors in the pathogenesis of arthritides. However, arthritis presents an epidemiological challenge and several risk factors have been suggested during the development or progression of arthritides. Despite extensive epidemiologic research, the etiology of arthritis is still unknown. Hence, identification of epidemiologic and genetic factors associated with susceptibility/protection from autoimmune disease is essential as it could lead to our understanding of disease pathogenesis for better diagnosis.