

## **Autonomic Nervous System Changes Associated with Rheumatoid Arthritis: Clinical and Electrophysiological Study**

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**Abstract :** The aim of this study was to evaluate clinically and electro physiologically the autonomic nervous system changes associated with rheumatoid arthritis (RA). The present study included 25 patients with RA [22 women (88%)] and 30 apparently healthy control subjects [27 women (90%)]. A thorough clinical examination was carried out. Disease activity and functional disability were assessed. Tests for assessment of autonomic functions include active and passive orthostatic stress tests, and sympathetic skin response (SSR). The presence of abnormality in 2 tests or more was a clue for the presence of autonomic neuropathy (AN). Sural sensory nerve conduction study and posterior tibial motor nerve conduction study were done. There was a statistically significant decrease in standing systolic and diastolic blood pressure (BP) components of the active orthostatic stress test and SSR amplitude as well as statistically significant prolongation of SSR latency of RA patients when compared to control. Three patients (12%) had clinical symptoms suggestive of AN; increased to 14 patients (56 %) when orthostatic stress tests and SSR were utilized. There were no statistically significant differences between patients with different disease activity score 28 with 4 variables grades of RA activity and SSR latency and amplitude. There were no statistically significant differences between patients with different Stanford Health Assessment Questionnaire Disability Index grades of RA functional disability and SSR latency and amplitude. In conclusion, autonomic neuropathy is a common extra-articular manifestation of RA affecting sympathetic and parasympathetic fibers.

**Keywords :** autonomic neuropathy, orthostatic stress test, rheumatoid arthritis, sympathetic skin response

**Conference Title :** ICR 2015 : International Conference on Rheumatology

**Conference Location :** London, United Kingdom

**Conference Dates :** May 25-26, 2015