



# Evaluating Intima-Media Thickness as an Inflammatory Biomarker in Chronic Inflammatory Demyelinating Polyradiculoneuropathy Disease

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## ABSTRACT

**Introduction:** Chronic Inflammatory Demyelinating Polyradiculoneuropathy Disease (CIDP) is an immune-mediated heterogeneous disease presented by muscle weakness and impaired sensory function. The autoimmune reaction of the body against the peripheral nervous system causes progressive neurodegeneration. Systemic inflammation is an inevitable pathophysiology of this disease, increasing the risk of non-communicable diseases. This study evaluated intima-media thickness (IMT) as an inflammatory biomarker of CIDP.

**Methods and Materials:** In total, 30 patients with CIDP and 34 normal age and body mass index (BMI) matched participants were recruited from the Firoozgar Hospital. Patients were diagnosed based on nerve conduction study and electromyography test. Carotid IMT values of the participants were measured using B-mode ultrasonography. Using the Mann-Whitney U test and linear regression adjusting with age, BMI, and gender, the IMT values were assessed.

**Results:** There was a significant difference in the mean IMT value of the CIDP patients compared to regular participants (normal =  $0.452 \pm 0.114$ ; CIDP =  $0.595 \pm 0.154$ ;  $p = 0.001$ ). Overall, the Neuropathy Limitations Scale was positively correlated to the mean IMT value ( $\beta$  coefficients = 0.654;  $p = 0.001$ ; CI: 0.033-0.111). Likewise, the IMT value was positively correlated to disease duration ( $\beta$  coefficients = 1.425; CI: 0.004-0.025;  $p = 0.009$ ). In contrast, the treatment duration was negatively correlated with the mean IMT value ( $\beta$  coefficients = -1.181; CI: -0.031 to -0.002;  $p = 0.032$ ).

**Conclusion and Discussion:** In the current study, mean right and left IMT values could be used to indicate CIDP disease severity and efficacy of the clinical treatment regimen.

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