

Focus On Diabetic Foot Neuroarthropathy: Autoimmunity And Charcot Disease

Orthopaedics / Foot & Ankle / Epidemiology, Prevention & Diagnosis

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Introduction

Some of the pathogenetic mechanisms of the Charcot disease are currently unclear.

Objectives

We aimed to assess the possible involvement of autoimmune response to neoepitopes resulting from oxidative post-translationally modification of self-proteins by reactive oxidants in Charcot neuroarthropathy (CN)

Methods

The population consisted of 124 subjects with type 2 diabetes mellitus, of which 47 had CN, 37 diabetic peripheral neuropathy without CN, and 40 uncomplicated diabetes, and 32 healthy controls. Autoantibodies against neoepitopes generated by glycated, HOCl-, H₂O₂-, and ONOO-collagen type I (CI) and type II (CII) were measured in sera with enzyme-linked immunosorbent assays. All participants signed a written consent form prior to collecting blood samples.

Results

Age, body mass index, waist and hip circumferences, and lipid profile were similar among the four groups, as well as glycosylated hemoglobin and duration of diabetes among subjects with diabetes. For CI, only antibodies against ONOO-CI were specifically increased in CN; conversely, for CII we found higher levels for native and all oxidative forms comparing CN with each other group.

Conclusions

Our results suggested that autoimmunity against neoepitopes resulting from oxidative posttranslationally modification of collagen, particularly CII, could be involved in the pathogenesis of CN.