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CD26: A POTENTIAL NOVEL HISTOLOGICAL MARKER OF IDIOPATHIC INFLAMMATORY MYOPATHIES

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Background: Idiopathic inflammatory myopathies (IMM) are a heterogeneous group of acquired skeletal muscle disorders including polymyositis (PM), dermatomyositis (DM) and immune-mediated necrotizing myopathy (IMNM), characterized by immune-mediated muscle damage1. Activated T cells are the predominant inflammatory infiltrates in muscle biopsies of PM and DM patients and the lack of T regulatory cells (Treg) has been implicated in the persistence of muscle damage. CD26 is an intrinsic membrane glycoprotein and a serine exopeptidase involved in the activation of T lymphocytes and amplification of inflammatory cytokines production. The enzymatically active form of CD26 is selectively expressed by activated T cells and has been described as a negative selective marker for human Treg.

Objectives: The aims of this study were to evaluate the expression of CD26 in muscle biopsies of IMM patients and to correlate it with patients’ clinical and histological features.

Methods: Immunofluorescence was used to evaluate CD26 expression and co-localization with CD3 and CD11c, markers of T cells and myeloid cells respectively, in muscle biopsies of 6 DM, 6 PM, 3 IBM and 3 IMNM patients and of 6 healthy controls.

Results: We found that CD26 is preferentially expressed in muscle biopsies of IMM patients with respect to controls and that its level of expression is higher in DM patients. In muscle biopsies of IMM patients, CD26 is distributed not only in the extracellular matrix surrounding myofibers and infiltrating leukocytes, but also at the level of T cell membranes and endothelial cells. Specifically, CD26 co-localization with CD3 is more prominent in DM muscle biopsies. We could not find any association between vessel morphology in terms of size and shape and CD26 endothelial expression, suggesting that CD26 is expressed at the perivascular level independently of the degree of vessel dysfunction. With regard to clinical features, we found that CD26 is more expressed in patients presenting the typical DM rash. Moreover, CD26 expression was found not to be significantly associated with the degree of muscle weakness nor with the presence of interstitial lung disease, dysphagia, myalgias or mechanic’s hands. As for histological data, higher levels of CD26 expression were found in biopsies with perivascular inflammatory infiltrates, especially T lymphocytes and macrophages.

Conclusion: Our data suggest that CD26 may represent a suitable marker for the diagnosis of IMM and a potential novel target for selective immune-therapies.

REFERENCES