



ORIGINAL ARTICLE

Epicardial fat tissue thickness is increased in patients with lichen planus and is linked to inflammation and dyslipidemia



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KEYWORDS

Echocardiography;
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Abstract

Background and Objectives: Lichen planus (LP) is a mucocutaneous inflammatory disease. Inflammation plays a major role in the progression of atherosclerosis. Epicardial fat tissue (EFT) has been shown to produce and secrete various proatherogenic and proinflammatory hormones and cytokines. The aim of this study was to assess EFT in patients with lichen planus.

Methods: Fifty-four patients with LP and 50 controls were enrolled in the study. LP was diagnosed according to the World Health Organization criteria. EFT was measured on the free wall of the right ventricle in parasternal long-axis view, as previously described and validated.

Results: There were positive correlations between EFT thickness and platelet/lymphocyte ratio, neutrophil/lymphocyte ratio, duration of LP, and high-sensitivity C-reactive protein (hsCRP) ($p < 0.001$, $p < 0.001$, $p = 0.002$ and $p < 0.001$, respectively). In multivariate analysis, after adjustments for relevant confounders, LDL cholesterol, hsCRP, platelet/lymphocyte ratio and duration of LP were independent predictors of EFT thickness in patients with LP ($\beta = 0.231$, $p = 0.014$; $\beta = 0.205$, $p = 0.037$; $\beta = 0.361$, $p = 0.001$ and $\beta = 0.133$, $p = 0.047$, respectively).

Conclusion: EFT is increased in patients with LP compared to control subjects. Duration of LP is correlated with EFT, and duration of LP is also an independent predictor of increased EFT, which is a predictor of subclinical atherosclerosis.

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PALAVRAS-CHAVE

Ecocardiograma;
Tecido adiposo
epicárdico;
Líquen plano

Espessura do tecido adiposo epicárdico aumentada em pacientes com líquen plano e relação com inflamação e dislipidemia

Resumo

Introdução e objetivos: O líquen plano (LP) é uma doença inflamatória mucocutânea. A inflamação tem um papel importante na progressão da aterosclerose. Demonstrou-se que o tecido adiposo epicárdico (TAE) produz e segrega várias hormonas e citocinas pró-aterogénicas e pró-inflamatórias. O objetivo deste estudo foi a avaliação do TAE em pacientes com LP.

Métodos: Cinquenta e quatro pacientes com LP e 50 controlos foram inscritos no estudo. O LP foi diagnosticado de acordo com os critérios da Organização Mundial de Saúde. O TAE foi medido na parede livre do ventrículo direito, do ponto de vista do eixo longo para-esternal, conforme descrito e validado anteriormente.

Resultados: Verificaram-se correlações positivas entre a espessura da gordura epicárdica e a relação linfócitos-plaquetas, a relação neutrófilos-linfócitos, a longevidade do LP, e o hsCRP ($p < 0,001$, $p < 0,001$, $p = 0,002$ e $p < 0,001$, respetivamente). Após análises multivariadas e ajustamentos para confundidores relevantes (colesterol LDL, hsCRP, relação plaquetas-linfócitos e longevidade do LP), foram confirmados como preditores independentes da espessura da gordura epicárdica em pacientes com LP ($\beta = 0,231$, $p = 0,014$; $\beta = 0,205$, $p = 0,037$; $\beta = 0,361$, $p = 0,001$ e $\beta = 0,133$, $p = 0,047$, respetivamente).

Conclusão: O TAE está aumentado em pacientes com LP em comparação com o grupo de controlo. A longevidade do LP está correlacionada com o TAE, e a sua longevidade é uma variável independente de previsão do TAE aumentado, que por sua vez é uma variável de previsão da aterosclerose subclínica.

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Introduction

Lichen planus (LP) is a mucocutaneous inflammatory disease that affects 0.5-1% of the population. Its etiology remains unknown; it may be caused by a cell-mediated immunological response in which auto-reactive T4 and T8 lymphocytes are the cytotoxic effector cells which cause degeneration and destruction of keratinocytes.^{1,2} LP is associated with lipid disorders, and the inflammatory process may lead to lipid metabolism disturbances such as increased serum triglycerides (TG) and decreased high-density lipoprotein (HDL).^{3,4} Inflammation is the predominant mechanical contributor to atherothrombosis and measurement of inflammatory markers could have a role in the management of risk stratification beyond the scope of current global risk assessment.^{5,6} It has been hypothesized that the association between LP and cardiovascular risk is due to chronic systemic inflammation.^{3,6}

Epicardial fat tissue (EFT) is the adipose tissue located between the myocardial epicardium and visceral epicardium of the heart. EFT has been shown to produce and secrete various proatherogenic and proinflammatory hormones and cytokines, including tumor necrosis factor (TNF)- α , interleukin (IL)-6, adipocytokines and leptin.⁷⁻⁹ Previous studies have demonstrated an association between EFT and insulin resistance, diabetes mellitus, increased cardiometabolic risk, inflammatory markers and coronary artery disease (CAD).¹⁰⁻¹⁵

Like psoriasis, LP is a chronic inflammatory disease. Bacaksız et al. indicate that EFT is significantly increased in patients with psoriasis vulgaris.¹⁶ The aim of this study was to assess EFT in patients with lichen planus.

Methods**Patient selection**

A total of 54 patients with LP and 50 age-matched controls were enrolled in the study from January 2014 to January 2015. The inclusion criteria for the study group were as follows: men or women aged more than 18 years with LP confirmed according to the clinical and histopathologic criteria established by the World Health Organization. LP was assessed clinically in a standardized dermatological examination by trained and experienced physicians, some of them dermatological consultants. The examination involved the whole body including the scalp and nails. Patients with renal failure, hepatic insufficiency, a history of cardiovascular, cerebrovascular or connective tissue disease, hypertension or epithelial dysplasia were excluded from the study, as were those undergoing systemic treatment with steroids or other drugs, immunosuppressive treatment, retinoids, lipid-lowering therapy, or antihypertensive or antiplatelet drugs. The study was approved by the local ethics committee. Informed consent was obtained from all participants.

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