Assessment of Some Cardiovascular Risk Factors in Egyptian patients with Lichen planus

Thesis
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سُبْحَانَكَ لاَ عِلْمَ لَنَا إلاَّ مَا عَلَّمْتَنَا إنَّكَ أنتَ الْعَلِيمُ الْحَكِيمُ

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Abstract

Background: Chronic inflammation was found to play an important role in the development of cardiovascular risk factors. Homocysteine and fibrinogen have been identified as major independent risk factors for cardiovascular disease. Lichen planus is assumed to be closely related to dyslipidemia. Several cytokines involved in lichen planus pathogenesis, could explain its association with metabolic syndrome and dyslipidemia, as chronic inflammation has been suggested as a component of the metabolic syndrome.

Objective: The aim of the present study is to detect cardiovascular risk factors in a sample of Egyptian patients with lichen planus.

Patients and methods: This study was done on 40 patients of lichen planus and 40 healthy controls. All patients and controls were subjected to clinical examination. Serum levels of homocysteine, fibrinogen and CRP were measured by ELISA technique. Metabolic syndrome parameters including anthropometric measures, lipid profiles, blood sugar and blood pressure were studied.

Results: Patients with lichen planus showed **significant** association with metabolic syndrome parameters including lipid profile derangements than controls. Serum homocysteine, fibrinogen and CRP were significantly higher in lichen planus patients than controls. Serum homocysteine correlated with serum CRP and serum fibrinogen. However there was no correlation between serum levels of homocysteine and fibrinogen with metabolic syndrome criteria and related disorders.

In conclusion: Patients with lichen planus are at increased risk of metabolic and cardiovascular complications.

Key words:

Lichen planus, homocysteine, fibrinogen, metabolic syndrome.

List of Abbreviations

AHA	American Heart Association.
BDCA-2	Blood dendritic cell antigen 2.
BM	Basement membrane.
BMI	Body mass index.
BMZ	Basement membrane zone.
BP	Blood pressure.
CCR7	Chemokines receptor 7.
CD	Cluster of differentiation.
CD 45	Antigenic marker of T memory cell.
CD 95	Antigenic marker of Fas.
CD123	Antigenic marker of plasmacytoid dendritic cell.
CD4	Antigenic marker of T helper cell.
CD8	Antigenic marker of T cytotoxic cell.
CD95L	Antigenic marker of Fas ligand.
CHD	Coronary heart disease.
CLA	Cutaneous lymphocyte associated antigen.
CVD	Cardiovascular disease.
DCs	Dendritic cells.
DEJ	Dermo-epidermal junction.
DM	Diabetes mellitus.
DNA	Deoxy ribonucleic acid.
E- Selectin	Adhesion molecule mediates the interaction of activated endothelial cells with leukocytes.
ECG	Electrocardiogram.
ELAM-1	Endothelial leukocyte adhesion molecule-1.
FBS	Fasting blood sugar.
Fg	Fibrinogen.
FHS	Framingham heart study.
FPG	Fasting plasma glucose.

GH	Growth hormone.
GM-CSF	Granulocytes-macrophage colony stimulating factor.
HBsAg	Hepatitis B surface antigen.
HCV	Hepatitis C virus.
Hcy	Homocysteine.
HDL-C	High density lipoprotein-cholesterol.
HF	Heart failure.
HHcy	Hyperhomocysteinemia.
HHV-7	Human herpes virus type 7.
HLA	Human leukocyte antigen.
HPA-axis	Hypothalamic-pituitary-adrenal axis.
Hs-CRP	High sensitive C-reactive protein.
HTN	Hypertension.
ICAM-1	Intracellular adhesion molecule 1.
IDF	International Diabetes Federation.
IFN	Interferon.
IFN- α	Interferon alpha.
IFN- β	IFN- β Interferon beta.
IFN- γ	Interferon gamma.
Igs	Immunoglobulins.
IHD	Ischemic heart diosease.
IL	Interleukin.
LDL-C	Low density lipoprotein-cholesterol.
LP	Lichen planus.
LPSA	Lichen planus specific antigen.
MHC	Major histocompatibility class.
MI	Myocardial infarction.
MMPs	Metalloproteinases.
MS	Metabolic syndrome.
NHLBI	National Heart ,Lung and Blood Institute.
NSAIDs	Non steroidal anti-inflammatory drugs.
OGTT	Oral glucose tolerance test.
OLP	Oral lichen planus.

P- value	P- value Probability value.
PAS	Periodic acid –schiff stain.
PCOS	Poly cystic ovary syndrome.
PDCs	PDCs Plasmacytoid dendritic cells.
PROCAM	Prospective cardiovascular munster study.
RANTES	Regulated upon activation, normal T cell expressed and secreted.
RNA	Ribonucleic acid.
SAH	S-adenosylhomocysteine.
SAM	S-adenosylmethionine.
T cells	Thymus derived lymphocytes.
Tc	T-cytotoxic.
TC	Total cholesterol.
TCR	T-cell receptor.
TGS	Triglycerides.
Th-1	T-helper 1.
Th-2	T-helper 2.
tHcy	Total Homocysteine.
TIMPs	Tissue inhibitors of metalloproteinases.
TNF- β	Tumor necrosis factor beta.
Um	Micrometer.
VLDL	Very low density lipoprotein.
WC	Waist circumference.

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Introduction

INTRODUCTION

Lichen Planus is a mucocutaneous inflammatory disease, involvement of the oral mucosa or genital mucosa in severe cases may be debilitating. Involvement of the scalp and nails may also occur. Lichen Planus is characterized by a band-like inflammatory infiltrate enriched in CD4-positive cells, vaculating degeneration of the basal epithelial layer and the presence of acidophilic bodies that may represent apoptotic kertinocytes ***(Arrieta et al., 2000).*** Its aetiology is unknown and may be caused by a cell-mediated immunological response that auto reactive cytotoxic T lymphocytes are the effector cells which cause degeneration and destruction of kertinocytes ***(Iijima et al., 2003).***

Coronary artery Disease is the major cause of mortality and morbidity worldwide. The most common cause of an acute myocardial infarction (AMI) is atherosclerotic coronary artery disease (CAD) with erosion or rupture of a plaque causing transient, partial or complete arterial occlusion. Heart cannot continue to function without adequate blood flow, and if it is severely compromised, death is inevitable. Several risk factors for coronary heart disease have been well documented, including hypertension, hyperlipidemia, diabetes, a positive family history, smoking, obesity and inactivity ***(Jonasson et al., 2005)*** Plasma fibrinogen is an important component of the coagulation cascade, as well as a major determinant of blood viscosity and blood flow. Increasing evidence from epidemiological studies suggests that elevated plasma fibrinogen levels are associated with an increased risk of cardiovascular disorders including ischemic heart disease (IHD), stroke and other thromboembolism. This increase in plasma fibrinogen levels may promote a prothrombotic or hypercoagulable state, and may in part explain the risk of stroke and