Original article

Association of coronary artery disease with psoriasis in a group of patients in queen alia heart institute (qahi) in jordan

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Abstract

Objective: The aim of our study is to demonstrate the association between psoriasis and CAD in a group of patients at QUEEN ALIA HEART INSTITUTE (QAHI)..

Methods: This retrospective study was conducted at QUEEN ALIA HEART INSTITUTE from April 2012 to August 2016. 167 psoriatic patients (with moderate to severe psoriasis) and 197 non-psoriatic patients (control group) were matched by sex, age and risk factors of CAD. All patients underwent coronary angiography, and the incidence of coronary artery disease was compared between the two groups.

Results: After analysis, the p-value of CAD risk factors in both groups (psoriasis and controls) were: age (41.3 year, 35.4 ,0.04) , male (67% , 64% ,0.06), smoking (60.5% , 56% , 0.4) , HTN (40.5 % , 43% , 0.29) ,DM (37.5% ,36.3% ,0.3), hyperlipidemia (20.3% , 17.8% , 0.41), family history (36.1% ,34..4 ,0.05). After matching for all these risk factors, the rate of CAD in psoriasis patients was (8.2%) and (2.1%) in non-psoriatic patients with p-value less than 0.001.

Conclusion: Psoriasis (moderate and severe) is an independent risk factor for increasing the risk of coronary artery disease in (sex, age, and other risk factor for CAD) matched patients.

Keywords: *Coronary artery disease, Psoriasis, coronary angiography.*

Introduction

CAD is a very common disease in Jordan and its risk increases in systemic inflammatory condition such as psoriasis which affect about 1-3 % of the population**(1**). It is a chronic inflammatory process classified to severe, moderate, and mild according to psoriasis area severity index (PASI) score (PASI combines the assessment of the severity of lesion and the area affected into a single score in the range of 0 (no disease) to 72 (maximal disease**), (2**). It is a Th1/Th17 driven inflammation that stimulates TNF-α which affects keratinocyte proliferation and in turn causes abnormal vascularization of skin**(3,4).**

There are multiple variants of psoriasis, the most common is vulgaris. Other variants are pustular, guttate, and inverse types.

Psoriasis is usually associated with other co-morbidities such as Crohn's disease, HTN, hyperlipidemia, diabetes milletus, obesity, smoking, depression, and all these co-morbidities increase the risk of CAD, so there is an association between CAD and psoriasis, and even after control these risk factors, CAD is still more prevalent in psoriasis(5,6,7).

Method

From the medical records of QAHI data were collected for this study between April 2012 to August 2016.

The study includes 167 psoriatic patient, and 197 patients who do not have psoriasis. All the psoriatic patients were with moderate to severe psoriasis (according to PASI score), and all were Jordanian patients.

After matching theme by risk factors of CAD, and performing either coronary angiography, or coronary CT angiography, rates of CAD were compared between these two groups

Results

167 psoriatic patients were studied, 62% were males with a mean age of 44,

And 197 patients were non-psoriatic (controls), 60% were males with a mean age of 40,

Rates of Risk factors of CAD in psoriatic group were as follows:

Hypertension 41% (68 patients)

Hyperlipidemia 21 %(35 patients)

Smoking 68 %(114 patients)

Diabetes 35 %(58 patients)

Family history of CAD 31 %(52 patient)

And the rates of Risk Factors of CAD in control group were as follows:
HTN 44% (86 patients)
Hyperlipidemia 20% (39 patients)
Smoking 61% (120 patients)
DM 34% (67 patients)
Family history of CAD 28% (55 patients)
About 19 patients of the 167 psoriatic group were found to have coronary artery disease, and 6 patients of non –psoriatic (control) group were found to have CAD, and this reflects a P-value of < 0.001 which is significant.

Discussion

Psoriasis is a multisystem disorder, affecting the patient's wellbeing physically and psychologically, and reducing his quality of life **(3, 4) ,** and it is associated with many co-morbidities such as CAD**(3,8,9)**

Our study reveals that rate of CAD in the Psoriatic group was more than that in non-Psoriatic one and that was consistent with *Kimball et al* **(9)** study which showed that CAD is more common in Th1-mediated inflammatory diseases like SLE, RHEUMATOID ARITHRITIS, and PSORIASIS, than in the general population. The clear cause of this association is still unknown, but some authors attribute that to the increase in the prevalence of the risk factors of CAD in psoriatic patients.

Some authors support this concept of the relationship between psoriasis and CAD by the studies that showed that the systemic treatment of psoriasis decreases the risk of CAD(**10, 11, 12)** .

Conclusion

Psoriasis (moderate to severe) should be taken in mind as an independent risk factor for CAD, and more studies are needed on patients with mild psoriasis to determine its association with CAD.

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