Case study

Impact of Risk factor Comorbidities in Psoriasis: A single center study of Morocco

Abstract:

Introduction: Psoriasis is a chronic autoimmune inflammatory disease. Psoriasis is recognized as a systemic inflammatory disease with cutaneous and extracutaneous manifestations, often associated with multiple comorbidities. The aim of our study is to identify the various comorbidities associated with psoriasis, to determine their prevalence and better understand the systemic nature of the disease in Moroccan patients

Materials & Methods: We conducted a prospective study in the dermatology department of the Ibn Sina University Hospital in Rabat Morocco between June 2021, and June 2022. we included 150 patients who were diagnosed with mild, moderate, or severe psoriasis.

Results: 150 patients with psoriasis were enrolled during this period with 77% case of mild to moderate psoriasis and 23% of severe psoriasis. The sex ratio was 0.73 and the average age was 43.9 years. Comorbidities were dominated by metabolic syndrome (33.33%) in the lead, followed by autoimmune diseases (29.33%), cardiovascular diseases (24% n=36), rheumatological diseases (18%), dermatological diseases 9%), or tumor pathologies (9%), infectious diseases (9%), smoking and alcohol consumption (9%), stress and psychiatric disorders (6%), and other diseases (6%).

Conclusion: This study encompasses the comorbidities associated with psoriasis in a Moroccan population. These comorbidities are diverse, with a predominant presence of metabolic syndrome, cardiovascular diseases, and thyroid disorders. A multicenter study involving a larger number of patients would be desirable.

KEYWORDS: psoriasis, comorbidities , metabolic syndrome, cardiovascular diseases

INTRODUCTION:

Psoriasis is a chronic and common erythematous-scaly dermatosis affecting approximately 3 to 5% of the global population[1]. In Morocco, the prevalence in Morocco is estimated at 1.1‰ according to PSOMAG study [2] . Psoriasis is recognized as a systemic inflammatory disease with cutaneous and extracutaneous manifestations, often associated with multiple comorbidities[1]. The aim of our study is to identify the various comorbidities associated with psoriasis, to determine their prevalence and better understand the systemic nature of the disease in Moroccan patients . This comprehensive approach is essential for improving the management and overall care of patients with psoriasis..

MATERIALS & METHODS:

We conducted a prospective study in the dermatology department of the Ibn Sina University Hospital in Rabat between June 2021, and June 2022. We included 150 patients who were diagnosed with psoriasis, whether it was mild, moderate, or severe. These patients consulted or were hospitalized in our dermatology department.

The epidemiological profile of patients and associated comorbidities were documented

Excel and Statistical Package for the Social Sciences (SPSS Inc., version 15.0 for Windows) were used for data entry and analysis.

RESULTS:

In our study, 150 patients with psoriasis were enrolled from June 2021 to June 2022. Among them, 77% of cases were followed up in outpatient clinics for mild to moderate psoriasis (psoriasis area and severity index PASI <10), while 23% were hospitalized for severe psoriasis (PASI>10).

The sex ratio was 0.73, with 58% (n=87) women and 42% (n=63)men.

The average age was 43.9 years (3-79 years), with children accounting for 20.66% n=31 and adults for 79.33% n=119 of the total.

Comorbidities were dominated by metabolic syndrome (33.33% , n=50) in the lead, followed by autoimmune diseases (29.33% n=44), cardiovascular diseases (24% n=36), rheumatological diseases (18% n=27), dermatological diseases 9% n=6), or tumor pathologies (9% n=6), infectious diseases (9% n=6), smoking and alcohol consumption (9% n=6), stress and psychiatric disorders (6% n=4), and other diseases (6%). fig1

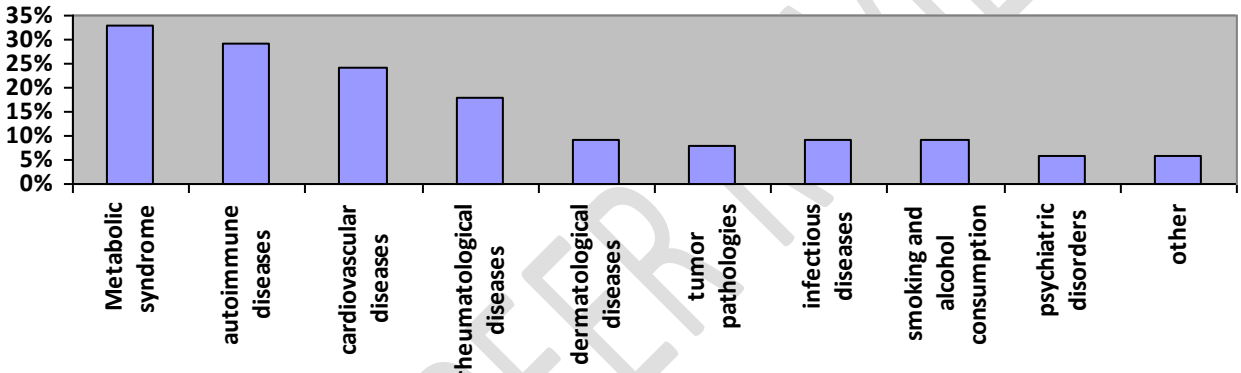

Figure 1 : Comorbidities groups in our patients

Regarding metabolic syndrome, diabetes was in the lead with 22%, followed by hypertension 18%, dyslipidemia 14%, obesity 11%, and hepatic steatosis 9%.

The cardiovascular diseases associated with our patients were predominantly characterized by hypertension 18%, heart failure 4%, valvular pathologies (1case) , and coronary artery diseases (1case).

Autoimmune pathologies were dominated by thyroid disorders. In 18% of cases, an association with psoriatic arthritis was found. Additionally, among dermatological conditions, there were 4 cases of frontal fibrosing alopecia and 4 cases of androgenetic alopecia.

Several other comorbidities were also identified, including benign prostatic hyperplasia, prostate cancer , ovarian cancer, myeloproliferative syndrome , Pulmonary tuberculosis HIV infection , syphilis, pulmonary sarcoidosis and anemia

DISCUSSION

Psoriasis is a common chronic inflammatory disease of the skin that is increasingly being recognized as a systemic inflammatory disorder. affects 3 to 5% of the total world population [1]. The disease most commonly presents as chronic, symmetrical, erythematous, scaling papules and plaques [3]. It has significant impacts on both physical and emotional health-related quality of life comparable to other major illnesses[4]. The understanding of this complex condition, which encompasses cutaneous psoriasis along with its comorbidities, has evolved significantly in recent years. Beyond

skin lesions, psoriatic arthritis, metabolic syndrome including type II diabetes, cardiovascular diseases, inflammatory bowel diseases, mood disorders, and certain cancers constitute the Psoriatic Syndrome[5-6].

Co-morbidity is defined as the co-existence of several diseases in the same patient. The study of co-morbidities does not include the study of socioeconomic factors, lifestyle, or access to care; it only considers disease associations on the individual scale [7]. These comorbidities are present at the time of diagnosis but may also appear during follow-up, highlighting the importance of screening to ensure comprehensive medical management of patients with psoriasis.

Metabolic syndrome was defined according to the International Diabetes Foundation.5 According to this foundation, and based on Mediterranean ethnicity, it is diagnosed when a person has at least three of these five conditions: fasting glucose 100 mg/dl or greater (or receiving drug therapy for hyperglycemia), blood pressure 130/85 mmHg or higher (or receiving drug therapy for hypertension), TGs 150 mg/dl or higher (or receiving drug therapy for hypertriglyceridemia), high-density lipoprotein cholesterol (HDLC) level < 40mg/dl in men or <50 mg/dl in women (or receiving druf therapy for reduced HDL-C), and waist cirumference 94 cm or greater in men or 80 cm greater in women[8].

A higher prevalence of metabolic syndrome in individuals with psoriasis compared to the general population have been consistently demonstrated in the literature. The association between psoriasis and metabolic syndrome is multifactorial, involving shared genetic predisposition, chronic inflammation, and lifestyle factors [9-10]. The pathogenesis of metabolic syndrome in psoriasis is chronic low-grade inflammation, characterized by increased production of pro-inflammatory cytokines such as tumor necrosis factor-alpha (TNF-α), interleukin-6 (IL-6), and interleukin-17 (IL-17)[9-10]. This systemic inflammation not only contributes to the development of insulin resistance but also promotes dyslipidemia and endothelial dysfunction, leading to atherosclerosis and cardiovascular complications (vascular cerebral accident and myocardial infarction are 3 times more common in psoriatic patients [11-12-13]. Our results are consistent with the literature, with metabolic syndrome and cardiovascular diseases being the most common comorbidities.

Psychological disorders and stress they play a role in exacerbation of psoriasis, by dysregulation of the hypothalamic-pituitary-adrenal axis, sympathetic-adrenal-medullary axis, peripheral nervous system, and immune system. Skin responds to stress by releasing inflammatory cytokines, which subsequently activate mast cells, leading to immune dysregulation and neurogenic inflammation [14-15].

Regarding smoking and alcohol consumption, the risk of developing palmoplantar pustulosis psoriasis is 8 times higher in smokers. For other forms of psoriasis, according to some epidemiological studies, the risk is 2 times higher, and 3 times higher in alcoholic patients [16-17].

In our Moroccan series, stress and alcohol consumption were each reported at only 6%.

Psoriatic arthritis is an inflammatory arthritis that occurs in 10 to 40% of psoriatic patients, in our study, the prevalence was 18%. It can affect all joints (peripheral and axial) as well as the tendon sheaths of muscles (enthesitis). Increased mortality has been reported in patients with psoriatic arthritis [18].

The prevalence of autoimmune thyroiditis is higher in psoriasis (20.9% - 34%) [19] and in our study, thyroid disorders were present in 22%.

Inflammatory bowel diseases occur 1.5 times more frequently in patients with psoriasis. These include Crohn's disease, ulcerative colitis, and celiac disease [20].

Regarding renal pathologies, psoriatic nephropathy has been identified. A cohort study conducted in the UK found that severe psoriasis was associated with a 4-fold higher risk of death from non-

hypertensive renal diseases. For mild psoriasis, the risk was 2-fold higher [21]. For uveitis, it has been associated with psoriasis in 7 to 20% of cases [22].

However, in our study, no cases of chronic inflammatory bowel disease, renal involvement, or uveitis were reported.

CONCLUSION:

Psoriasis is a systemic inflammatory disease associated with multiple comorbidities, leading to increased mortality and hospitalization rates. Its management requires a multidisciplinary approach, including screening for metabolic diseases and cardiovascular risk factors, , and assessing existing psychological or psychiatric disorders. Long-term disease control is essential for improving quality of life.

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