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Comorbidities Associated with Psoriasis: A Single Center Study of Morocco

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Authors' contributions

This work was carried out in collaboration among all authors. Authors AF, MEA and NER designed the study, performed the statistical analysis, rote the protocol, and wrote the manuscript. Authors MM and KS they revised the manuscript revision. All authors read and approved the final manuscript.

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Short Research Article

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ABSTRACT

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

Materials and 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% cases 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

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by autoimmune diseases (29.33%), cardiovascular diseases (24%), 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.

1. 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]. Our study aims to identify the various comorbidities associated with psoriasis, 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.

2. MATERIALS AND 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, diagnosed with psoriasis, whether 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.

3. 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% and adults for 79.33% 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%). Fig 1.

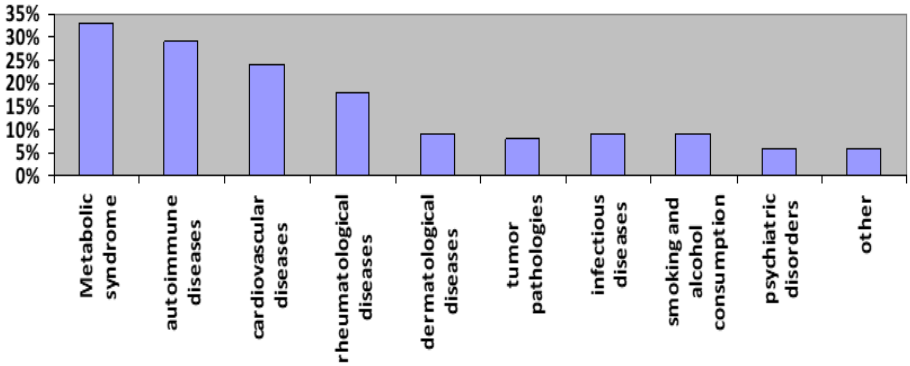

Fig. 1. Comorbidities groups in our patients

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

Associated cardiovascular diseases among our patients were predominantly hypertension 18%, heart failure 4%, valvular pathologies (1case), and coronary artery diseases (1case).

Thyroid disorders dominated autoimmune pathologies. In 18% of cases, an association with psoriatic arthritis was found. Additionally, there were 4 cases of frontal fibrosing alopecia among dermatological conditions 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.

4. DISCUSSION

Psoriasis is a common chronic inflammatory disease of the skin that is increasingly recognized as a systemic inflammatory disorder. It affects 3 to 5% of the world population [1]. The disease 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]. Understanding of this complex condition, which encompasses cutaneous psoriasis and 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].

Comorbidity is defined as the coexistence of several diseases in the same patient. The study of comorbidities does not include 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. 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 drug 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 has 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 (cerebrovascular accident and myocardial infarction are 3 times more common in psoriatic patients [11-13]. Our results are consistent with the literature, with metabolic syndrome and cardiovascular diseases being the most common comorbidities.

Psychological disorders and stress play a role in the 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, activating mast cells, leading to immune dysregulation and neurogenic inflammation [14-15].

Smoking and alcohol consumption, increase the risk of developing palmoplantar pustulosis psoriasis 8 fold. While some epidemiological studies reported a 2 fold, and a 3 fold increase of risk for developing non-pustular types of psoriasis. [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].

Psoriatic nephropathy has been identified, as a comorbidity with psoriasis in a cohort study conducted in the UK, which found that severe psoriasis was associated with a 4-fold higher risk of death from non-hypertensive renal diseases,while the risk was 2-fold higher for mild psoriasis [21]. Uveitis has also 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.

5. 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.

CONSENT

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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