

Comorbid conditions in psoriasis – Higher frequency in females: A prospective study

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ABSTRACT

Aim: To study the association of obesity, diabetes, hypertension, and abnormal lipid profile in women above 40 years of age with psoriasis. **Materials and Methods:** Two hundred consecutive female patients with psoriasis attending private clinics were included. Complete general, systemic, and dermatological examinations were performed. Blood pressure, blood sugar, and lipid profile were recorded in all patients and the findings analyzed. **Results:** Of 200 patients, 45 were obese. Eighty-eight patients had diabetes mellitus and 29 had dyslipidemia of whom 13 and 18, respectively, were detected at the time of enrolment. All 25 patients with systemic hypertension were on treatment. A total of 177 (88.5%) patients had one or more comorbid conditions. This frequency is much higher when compared to other Indian studies where the sample included patients of both sexes.

Key words: Comorbidities, female patients, psoriasis

INTRODUCTION

Psoriasis and comorbidity is alarmingly increasing in frequency, with a significant impact not only on morbidity and mortality but also on healthcare utilization. Prevalence of obesity, diabetes, hypertension, and abnormal lipid profile will pose an enormous financial burden to the patient and also to insurance companies. Comorbidity as a result of chronic inflammatory disease has been convincingly demonstrated in rheumatoid arthritis patients; but, reports on psoriasis have remained comparatively scarce. Subsequent to many studies indicating an association of comorbidity and psoriasis, the association in female patients was thought of as the outpatient attendance in the population studied had more female patients than males and comorbidities carry more risk in females than males. Females have higher residual lifetime risks at all ages. Comorbidities carry significant reduction in life expectancy, which is higher in females as compared to that of males according to some studies.^[1]

Aim

To study the association of obesity, diabetes, hypertension, and abnormal lipid profile with psoriasis in female patients above 40 years of age.

MATERIALS AND METHODS

The study included 200 consecutive female psoriatic patients aged above 40 years, attending an urban private dermatology clinic from March 2009 to August 2010 over a period of 18 months. Complete general, systemic, and dermatological examinations were performed. Blood pressure, fasting, and post-prandial blood sugar levels and fasting lipid profile were recorded in all patients and the findings analyzed. The following were the values used as diagnostic cut-off:

Obesity: Elevated waist circumference Women: 35 inch (88 cm). BMI > 30.

Dyslipidemia: Elevated triglycerides 150 mg/dl, Cholesterol 50 mg/dl It cannot be 50 mg/dl. Please clarify.

Hypertension: Elevated blood pressure 130/85 mm Hg.

Diabetes: Elevated fasting glucose 100 mg/dl, which was also confirmed with glucose tolerance test.

OBSERVATION AND RESULTS

Of the 200 patients, 142 were in the age group 40–49 years, 35 in the age group 50–59 years, 18 in the age group 60–69, and only 5 were in the age group 70 years and above [Figure 1].

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The duration of the disease (psoriasis) ranged from 2 months to more than 20 years.

A total of 74 patients had psoriasis for less than 1 year, 85 had for 1-5 years, 21 had for 5-10 years, 16 had for 10–20 years, and 4 patients had it for more than 20 years [Figure 2].

Of the 200 patients, 142 (70.1%) were below the age of 50 years. In 18 patients, the age of onset was less than 30 years, of which 5 had 2 comorbidities. All four patients who had hypertension followed by psoriasis were in the age group of 40-49 years. Earlier age of onset of psoriasis was associated with increased incidence of comorbidities. Similarly, earlier onset of comorbidities or their treatment, eg, with beta-blockers, was associated with an earlier onset of psoriasis. Both psoriasis and comorbidity and the drugs used affect each other.

A common type of psoriasis observed was plaque-type followed by palmoplantar type. A total of 132 females had plaque-type

psoriasis, 69 had palmoplantar psoriasis, and 36 had both plaque-type and palmoplantar involvement. Ten females had only scalp involvement. Two of the plaque-type psoriasis had a history of having an episode of erythroderma. Two patients had psoriatic arthropathy and one had pustular psoriasis.

Of the 200 patients studied, 45 were obese (22.5%). Ninety-eight (49%) patients had diabetes mellitus, 29 (14.5%) had dyslipidemia, of which 13 and 18 were detected at the time of enrolment, respectively, and the others were on treatment. All 25 (12.5%) patients with systemic hypertension were on treatment at the time of enrolment [Figure 3].

Of the 25 patients with systemic hypertension, six were on beta-blocker, which was later substituted with other drugs. Four had hypertension followed by psoriasis and two had psoriasis followed by hypertension.

Of the total 200 patients studied, 177 (88.5%) had one or more comorbid conditions, of which 29 had more than one comorbid condition [Figure 4].

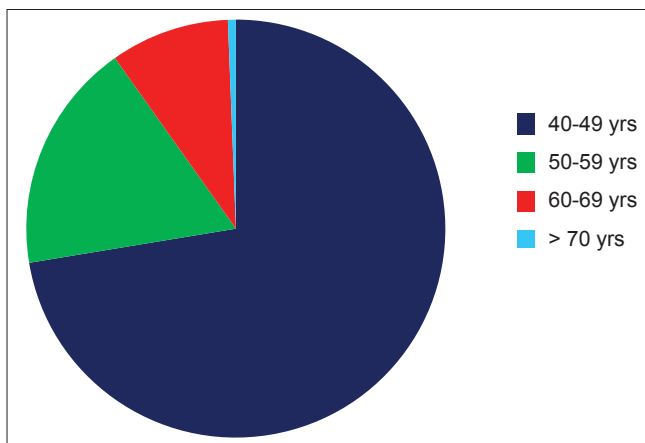


Figure 1: Age distribution in female patients with psoriasis

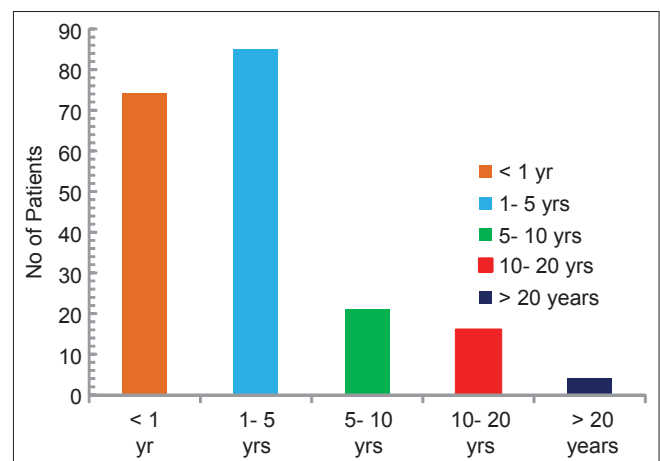


Figure 2: Duration of disease in female psoriatic patients above 40 years of age

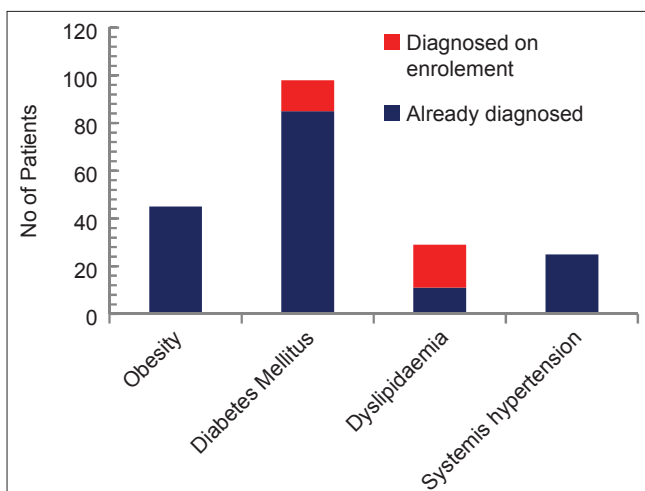


Figure 3: Comorbidities associated with female psoriatic patients above 40 years of age

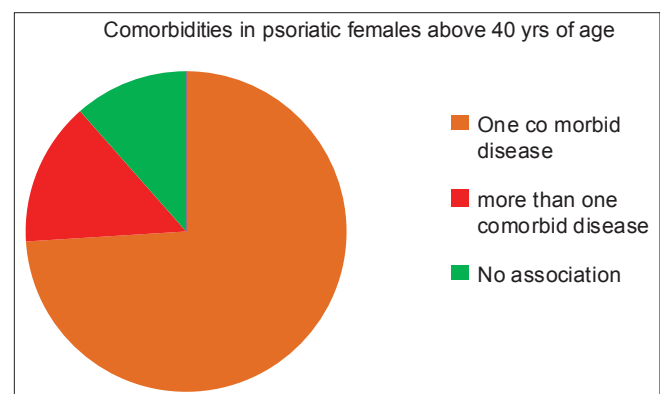


Figure 4: Comorbidities associated with female psoriatic patients above 40 years of age

DISCUSSION

Psoriasis is a common complex inflammatory disease that shares many immunological features with other common complex disorders, such as cardiovascular disease, obesity, diabetes, depression, and inflammatory arthritis. The concurrence of multiple diseases or disorders in association with a given disease (ie, comorbidity) has been observed in other inflammatory disorders, including rheumatoid arthritis. Psoriasis is now emerging as an important systemic disease associated with various comorbid conditions that include diabetes, hypertension, and abnormal lipid profile. Such comorbid conditions linked with psoriasis are associated with increasing rates of morbidity and mortality. In addition to the immunological similarities of psoriasis-related comorbidities, there are likely genes that are common to psoriasis and other complex disorders, including HLA-Cw6^[2] and TNF- α ^[3]. Data suggests that those with severe psoriasis requiring hospitalization have an increased mortality from cardiovascular causes.^[4]

In females, these disorders carry significant reductions in life expectancy, which is higher when compared to that of males, according to some studies.^[5] The diseases that occur concurrently are often thought to be related to common pathogenetic mechanisms. Comorbidities are most likely related to underlying disease pathogenesis and exclude factors such as lifestyle, access to healthcare, and patients' associated economic status. Comorbidities tend to increase with age^[6] and have significant impact by increasing the patients' physical limitations. As the number of comorbidities increases, so does healthcare utilization and healthcare cost.

Venkat Narayan *et al.*, have estimated that lifetime risk of developing diabetes is 32.8% for males and 38.5% for females. Females have higher residual lifetime risks at all ages. Individuals diagnosed as having diabetes witness drastic reductions in life expectancy. They also estimated that if an individual is diagnosed at age 40 years, men will lose 11.6 life-years and 18.6 quality-adjusted life-years and women will lose 14.3 life-years and 22.0 quality-adjusted life-years. In a study conducted by Lindegard, psoriasis in females was found to be associated with lung cancer, diabetes, obesity, myocardial infarction, and asthma.^[7] A link between diabetes mellitus and psoriasis was suggested as early as 1908. Qureshi *et al.* documented, in their prospective study of female nurses, the link between psoriasis and both diabetes mellitus and hypertension.^[8] It is also evident that, psoriasis is associated with significant comorbidities that imply an elevated risk of severe complications.^[9]

The relationship between psoriasis and comorbidities is likely linked to the underlying chronic inflammatory nature

of psoriasis.^[10] Tumor necrosis factor- α (TNF- α) plays a central role in the pathogenesis of psoriasis. It plays a critical role in activation of innate and acquired immune responses leading to chronic inflammation, tissue damage, and keratinocyte proliferation. TNF- α levels are markedly increased in skin lesions, synovium, and serum of patients with psoriasis and these correlate with the severity of the disease. Decreased levels are associated with clinical resolution.

In an Indian study conducted by Thomas *et al.*, maximum number of patients were in the age group 41-50 years and palmoplantar psoriasis was the most common type. More than half of patients had the disease for a period in the range of 1-5 yrs. Diabetes mellitus was seen in 11.6% of patients and hypertension in 14.1%. Both diabetes and hypertension were seen in 12.5% of patients; 6.6% of patients were obese. Lipid abnormalities were seen in 4.1% of patients. In their study, 55.8% patients had some comorbidity.^[11] A similar Indian study conducted by the same authors showed that total of 52% of patients had some comorbidity in their study. Both Indian studies^[10,11] were conducted in a hospital set up and the sample included both male and female patients. As psoriasis is now confirmed as a systemic disease, and serum biomarkers for inflammation are raised in patients with psoriasis with life expectancy reduced by about four years in patients with severe psoriasis, primarily owing to their increased cardiovascular risk,^[12] it becomes all the more mandatory to screen all patients with psoriasis.

This study shows an alarmingly increased incidence of associated comorbidities. In the vast majority (79%), the duration of the disease was less than 5 years. This also indicates that there is increasing incidence of the disease, which has precipitated an associated comorbid condition or vice versa. This finding is similar to an earlier Indian study.^[11] In this study (conducted in females), diabetes was the most common (49%) comorbidity associated, observed in nearly half the patients where as hypertension was seen only in 12.5%. In a similar Indian study, hypertension was the most common comorbidity associated, ie, 13%, followed by diabetes in 8%, where the sample included patients of both sexes.^[11] These findings endorse the fact that females are at a greater risk of developing other comorbid conditions, which will risk their quality of life and adversely affect the longevity of life.

Since the study was conducted in a private clinic, factors such as lifestyle, socioeconomic status, and index of awareness about the disease, in the sample studied might have contributed to the high incidence noted. However, prevalence of obesity, diabetes, systemic hypertension, and dyslipidemia, with a chronic diseases-like psoriasis will not only reduce quality of life of patients, but also pose an enormous financial burden on both patients and insurance companies.

Genetic markers in future will tell us which are the patients who are at risk of developing comorbidities and we can then intervene earlier and more aggressively to prevent premature death. This study highlights the importance of psoriasis and its association with comorbid conditions, especially in females above 40 years of age, as well as the role of dermatologist and other specialists in effective management of patients with psoriasis as a whole and not the skin alone.

CONCLUSION

The strikingly increased frequency of comorbid conditions in females with psoriasis warrants screening and monitoring of all females with psoriasis and teamwork between dermatologists and other specialists, in its management. Patients should adopt a healthy lifestyle and reduce stress so as not to contribute any more to risk factors. Treating psoriasis and the associated comorbid conditions aggressively from the beginning and a regular follow-up will definitely improve the quality of life of the patient. The genetic links between psoriasis and comorbidities are intriguing. Further research in this direction will shed more light in predicting those at risk and help in taking measures to prevent or postpone the occurrence of associated comorbid diseases. It is recommended and planned to conduct a similar study in male patients with psoriasis and compare the findings.

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