Clinical Characteristics and Co-morbidities in Patients with Psoriatic Arthritis

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Abstract

Introduction: Psoriatic Arthritis (PsA) is a chronic inflammatory arthritis and occurs in association with psoriasis, a chronic recurring and disfiguring skin disease. There is increasing recognition that both conditions are associated with multitude of co-morbidities.

Objective: To delineate the clinical characteristics and co-morbidities in PsA patients attending a rheumatology clinic in Kathmandu valley.

Material and Methods: Patients with already developed psoriasis who were seeking medical attention for arthritis during the period between January 2013 to December 2015 were prospectively enrolled. Patients were evaluated both by a dermatologist and a rheumatologist. A structured format was used to record relevant clinical information on psoriasis, PsA, and co-morbidities.

Results: Among 55 patients with PsA, all were found to have plaque psoriasis mainly affecting extensor surfaces (64%), multiple areas (16%), and scalp (11%). Nail involvement was observed in 22% of patients. Symmetric polyarthritis was the most frequent (26%) form, followed by oligoarthrtis (18%), distal interphalangeal (DIP) joint arthritis (16%), spondyloarthritis (13%), and enthesitis-dactylitis (7%).

Two thirds of patients were either overweight or obese. Almost half (47%) were current or past smokers. Diabetes or pre-diabetes was observed in 7% of cases. Hypertension, hyperlipidemia and ischemic heart disease (IHD) were present in 20%, 16%, and 5% respectively. Fatty liver disease was observed in 13% of the tested patients and 15% of patients were on some psychotropic drugs.

Conclusion: Psoriasis with PsA was associated with both cardiovascular and non cardiovascular co-morbidities. Doctors treating patients with these disorders should consider associated co-morbidities for better patient outcome.

Key words: psoriatic arthritis, co-morbidities, nepal

Introduction

Psoriasis is a chronic inflammatory skin condition characterized by scaly erythematous plaques on body surfaces. The estimated prevalence is 1.5% to 3.0% of the population in North America and Europe [1]. There is lack of community-based prevalence data from South Asian countries. Hospital- based data from India reveals that the prevalence of psoriasis varies from 0.44 to 2.8%, is twice more common in males as compared to females and mostly affects patients in their third or fourth decade of life[2]. In Nepal, the prevalence was found to be 2% in the eastern part of Nepal[3], whereas in a hospital-based study in Kathmandu the prevalence was found to be 3.6%[4].

Psoriatic Arthritis (PsA) is a chronic inflammatory joint disease characterized by the association of arthritis with psoriasis. A substantial proportion of patients with PsA have persistent inflammation, many develop progressive joint damage and disability and have reduced life expectancy [5]. It is estimated that 6% to 42%

of patients with psoriasis develop PsA[6]. In a hospital based study from Nepal, the articular involvement in psoriasis was found to be 10%[4].

There is increasing awareness in the medical community that the expressions of psoriasis extend beyond the skin. Studies have shown the associations between psoriasis and other systemic diseases, including obesity, diabetes mellitus, depression, Crohn's disease and cancer. Recently, an association between psoriasis and increased risk of various cardiovascular diseases has been documented[7]. Reich reported that co-morbidities are likely to reduce 3-4 years of life expectancy in patients with severe psoriasis[8]. Similarly, PsA, a systemic inflammatory joint disease and a complication of psoriasis, has also been found to be associated with an increased risk of cardiovascular morbidity and mortality in a way similar to many other inflammatory arthritis. A clear knowledge on the connection between psoriasis, PsA, and co-morbidities can aid in the better management of chronic inflammatory skin and joint disease, and above all, help to reduce the co-morbid complications and improve patient outcomes[6].

There is no information on co-morbidities associated with psoriasis and PsA in Nepalese patients. In this article, we aim to describe the pattern of co-morbidities in patients with psoriasis and PsA from a rheumatology clinic in Kathmandu valley.

Material and Methods

This is a cross sectional prospective study conducted at Aarogya Health Home, Lalitpur, a private rheumatology clinic dedicated to the care of patients with rheumatic diseases. Patients attending this clinic come upon referral from hospitals/private doctors for diagnostic evaluation or second opinion. Patients with already developed psoriasis who were seeking medical attention for joint disease during the period between January 2013 to December 2015 were enrolled after taking a written consent. Both the authors (rheumatologist and dermatologist) examined the patients. The diagnosis was made on clinical grounds with the support of appropriate laboratory and imaging studies where needed. Patient's demographic data and detailed clinical information including site of psoriasis, duration between the development of psoriasis and PsA, type of PsA, body mass index (BMI), smoking and alcohol habits and treatment of psoriasis at the time of presentation were recorded. Patient's medical records were reviewed to look for cardiovascular disorders like hyperlipidemia, hypertension, ischemic heart disease (IHD), coronary artery interventions like percutaneous coronary intervention (PCI) or coronary artery bypass graft (CABG). Similarly, presence of pre-diabetes or diabetes, liver disease, chronic kidney disease, anxiety/depression and history of recent cancer were documented. Owing to the limitations of resources, some of the co-morbidities (e.g., Crohn's disease) could not be assessed.

Hyperlipidemia was considered if the patient has been on lipid lowering drugs or if lipid profile was abnormal[9]. Hypertension was considered to be present if the patient has been on antihypertensive medication or when two blood pressure readings at the interval of 15minutes exceeded the value of 140/90mm of Hg. IHD and coronary artery interventions were recorded from patient's previous medical records. Diabetes or pre-diabetes were considered if the patient has been previously diagnosed and/or on treatment for these, or current blood sugar value fall in this range[10]. Liver disease was diagnosed on the basis of abnormal results on liver function test and/ or ultrasound of abdomen. Chronic kidney disease was diagnosed on the basis of abnormal serum creatinine value. Anxiety or depression was considered when the patient has been on psychotropic drugs for these disorders from a psychiatrist.

There was some variation in the methods employed in these tests as patients sometimes bring reports from different pathology services. Laboratory and imaging tests other than those mentioned above were performed as per the requirement and upon the discretion of the treating physician. SPSS 15 was used for analysis of the data.

Results

A total of 55 patients with PsA were seen during the study period. The mean age of the patients was 45.6 years (range 19-78 years). There were 30 males and 25 females with a male to female ratio of 1.2:1. All of the study participants had plaque type of psoriasis, among which 64% had localized lesions on extensor surfaces of body and 22% had nail involvement; scalp was affected in 11%, gluteal folds in 5% and palms and soles in 4% and 16% had multiple site involvement. The mean duration between the development of cutaneous lesions of psoriasis and onset of symptoms of PsA was 3.56 years (range 0-10 years). At the time of presentation 73% patients were using different types of topical preparations and 13% were taking methotrexate, however, 14% were not using any form of medication for skin disease.

Nail involvement was seen exclusively in patients with distal interphalangeal (DIP) joint involvement (75%) and symmetric polyarticular rheumatoid arthritis (RA)-like involvement (25%). Symmetric polyarticular involvement in a RA-like pattern was the most frequently (26%) observed type of PsA, followed by oligoarthrtis (18%), DIP arthritis (16%), spondyloarthritis (13%), enthesitis-dactylitis (7%) and arthritis mutilans (4%). Nine percent had combined involvement of spondyloarthritis and oligoarthritis whereas 7% had polyarthritis and dactylitis in combination.

In the co-morbidities, obesity was evaluated on the basis of body mass index (BMI). BMI was found to be normal in 36% of patients, whereas 42% were overweight and 22% obese. Forty seven percent of our patients were current or past smokers and 25% were drinking alcohol regularly. Diabetes or pre-diabetes was observed in 7% of cases. In cardiovascular co-morbidities, hyperlipidemia was present in 16%, hypertension in 20% and IHD in 5%. One patient with IHD had already undergone coronary intervention i.e., CABG. Among those who had investigations (n=32), 13% were found to have fatty liver disease. Fifteen percentages of patients were on some psychotropic drugs for anxiety/depression. One patient developed carcinoma of pancreas while on treatment for PsA.

Discussion

This is one of the first Nepalese studies to describe the co-morbid disorders associated with psoriasis complicated by PsA. As patients with PsA may present to different subspecialists for treatment, only patients seen in a rheumatology clinic were included. Small sample size and clinic-based data could have skewed the results as these referred patients are 'selected' ones and may have more severe disease or co-morbidities than those in the community. Milder forms of PsA, who could have no or lesser degrees of co-morbidities, may not have been the part of this study as they usually do not present to the private specialist clinics. Owing to this selection or referral bias, the information derived from the clinic-based database like ours may exert some skewed impression on co-morbidities associated with PsA.

The exact prevalence of PsA is not known in Nepal. In a hospital-based study of 337 rheumatic patients from Western Nepal, only 5 cases were identified in the subgroup of enteropathic or psoriatic or reactive arthritis[11], suggesting that this is not a common rheumatic condition in Nepal. However, it has been observed as a common complication among patients with psoriasis. A hospital-based study from central Nepal found a 10% prevalence of articular involvement in psoriasis[4]. Another study from India observed a prevalence of 8.7% in a large series of hospital patients involving more than 1100 participants[12]. In general, low prevalence has been observed from Asian countries in contrast to data from Europe, North America and Africa. The difference in prevalence among different countries/continents could be due to geographical and ethnic differences, different characteristics of the patients with psoriasis, and type of diagnostic criteria used for PsA[12].

In our patients with psoriasis, extensor surface of body was the most frequently affected area followed by nail, scalp and gluteal folds. Palmoplantar form was least common. Shrestha and Gurung[4] also observed a similar type of distribution with extensor surface affected the most. Nail involvement was seen exclusively in patients with DIP arthritis and symmetric polyarthritis. Nail involvement was observed in 15% patients in a large series of patients from a teaching hospital in Kathmandu[4]. The mean duration between the development of psoriasis and onset of symptoms of PsA was 3.56 years. This is in contrast to a study from India where the mean duration between onset of psoriasis and mean age of onset of PsA was 9.14 years[12]. However, there is no exact temporal relationship between the occurrence of skin and joint disease in psoriasis, though in majority skin lesions precede joint disease by several years.

Symmetric polyarticular involvement in a RA-like pattern was the most frequent type of PsA, followed by asymmetric oligoarthrtis, DIP arthritis, spondyloarthritis, enthesitis-dactylitis and arthritis mutilans. This observation was similar to a study from India[12] which also found symmetrical polyarthritis in more than half of patients. However, a Nepalese study observed an almost equal prevalence of DIP arthritis, peripheral mono- or asymmetric oligoarthritis and symmetrical polyarthritis in RA like distribution[4]. Spondyloarthritis, however, was not as common in our series as compared to Indian series[12].

The results of our study indicate that almost two thirds of our patients with psoriasis with PsA had abnormal weight, they were either overweight (BMI 23-30 for Asian population) or obese (BMI more than 30). Kimhi et al from Israel observed that BMI was significantly higher in patients with PsA as compared to control population[13]. Obesity was also more common in PsA patients with psoriasis as compared to psoriasis

patients without PsA from Toronto[6], though the difference was not statistically significant. Obesity itself is a risk factor for the development of psoriasis. It has been found that obese patients were more likely to have severe psoriasis (i.e., >20% body surface area)[14]. The current or past smoking rate was high in patients with PsA as compared to the national figure (35.5% for men and 15% for women)[15].

Diabetes or pre-diabetes was seen in 7% of cases which is close to national pooled prevalence of type 2 diabetes of 8.4%[16]. It was close to a study from India which showed 9% prevalence of diabetes among patients with PsA[17]. However, higher prevalence of diabetes has been observed in other studies[5, 6]. Psoriasis itself can increase the risk of getting diabetes. It has been found that women with psoriasis showed a 63% increased risk of future diabetes compared with women without psoriasis[18]. The lower prevalence of diabetes or prediabetes in our study could be due to small sample size or simply due to the lower prevalence of diabetes in this group of patients. Hyperlipidaemia was observed in 16% of our patients. It is slightly lower than that from a study from Canada[6]. Another study from USA showed the prevalence of hyperlipidaemia to be 27.8%[5]. The prevalence of IHD was observed in 5% of our patients with PsA. It was 8.2% in the Canadian study[6] and 7.2% in a study from USA [5]. Though we did not have abdominal ultrasound in all the patients, fatty liver disease was observed in 12.5% of the investigated patients. Liver diseases were also found to be significantly associated with PsA with an odds ratio of 7.4 in a study from Canada[6]. Fifteen percentages of patients were on some psychotropic drugs implying that anxiety/depression is common co-morbidities in patients with PsA. This has potential important clinical implications since depression has been shown to be associated with cardiovascular and other morbidities[19].

The co-morbidities associated with psoriasis and PsA have led to the increased understanding of systemic inflammatory nature of the disease. Dermatologists, rheumatologists and other physicians treating patients with psoriasis and PsA are required to have broad idea on the existence of both cardiovascular and noncardiovascular co-morbidities, screen for these where necessary and apply appropriate measures to improve the overall outcome of patients with these disorders.

References

1. Griffiths CE, Barker JN. Pathogenesis and clinical features of psoriasis. Lancet 2007; 370: 263–71. https://doi.org/10.1016/S0140-6736(07)61128-3
2. Dogra S, Yadav S. Psoriasis in India: Prevalence and pattern. Indian J Dermatol Venereol Leprol 2010; 76: 595-601. https://doi.org/10.4103/0378-6323.72443
3. Khadka DK, Agrawal S, Dhali TK. Methotrexate plus narrow band Ultravoilet B (NBUVB) versus methotrexate alone in the treatment of moderate to severe plaque psoriasis: A randomized clinical trial. Nepal Journal of Dermatology Venereology and Leprology 2015; 13: 12-23. https://doi.org/10.3126/njdvl.v13i1.14298
4. Shrestha DP, Gurung D. Psoriasis; Clinical and Epidemiological Features in a Hospital Based Study. Nepal Journal of Dermatology Venereology and Leprology 2012; 10: 41-5. https://doi.org/10.3126/njdvl.v10i1.6422
5. Han C, Robinson Jr DW, Hackett MV, Paramole LC, Fraeman KH, Bala MV. Cardiovascular Disease and Risk Factors in Patients with Rheumatoid Arthritis, Psoriatic Arthritis and Ankylosing Spondylitis. J Rheumatol 2006; 33: 2167–72.
6. Husted JA, Thavaneswaran A, Chandran V, Eder L, Rosen CF, Cook RJ, Gladman DD. Cardiovascular and Other Comorbidities in Patients With Psoriatic Arthritis: A Comparison With Patients With Psoriasis. Arthritis Care & Research 2011; 63 (12): 1729-35. https://doi.org/10.1002/acr.20627
7. Kimball AB, Gladman DD, Gelfand JM, Gordon K, Horn EJ, Korman NJ, et al. National Psoriasis Foundation clinical consensus on psoriasis comorbidities and recommendations for screening. J Am Acad Dermatol 2008; 58: 1031–42. https://doi.org/10.1016/j.jaad.2008.01.006
8. Reich K. The concept of psoriasis as as systemic inflammation: Implications for disease management. J Eur Acad Dermatol Venereol 2012; 26: 3-11. https://doi.org/10.1111/j.1468-3083.2011.04410.x
9. National cholesterol education program: Executive summary of the third report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol

in Adults (Adult Treatment Panel III). JAMA 2001; 285: 2486-97. https://doi.org/10.1001/jama.285.19.2486

10. American Diabetes Association, Standards of Medical Care in Diabetes-2011. Diabetes Care 2011; 34 (Suppl 1); S11-61. https://doi.org/10.2337/dc11-S011
11. Das RN, Paudel R. Spectrum of rheumatological disorders: an experience of 337 cases in a tertiary care hospital in Pokhara valley, Nepal. APLAR Journal of Rheumatology 2006; 9: 248-56. https://doi.org/10.1111/j.1479-8077.2006.00209.x
12. Kumar R, Sharma A, Dogra S. Prevalence and clinical patterns of psoriatic arthritis in Indian patients with psoriasis. Indian J Dermatol Venereol Leprol 2014; 80: 15-23. https://doi.org/10.4103/0378-6323.125472
13. Kimhi O, Caspi D, Bornstein NM, Maharshak N, Gur A, Arbel Y et al. Prevalence and risk factors of atherosclerosis in patients with psoriatic arthritis. Semin Arthritis Rheum 2007; 36: 203–09. https://doi.org/10.1016/j.semarthrit.2006.09.001
14. Sterry W, Strober BE, Menter A, International Psoriasis Council. Obesity in Psoriasis: The metabolic, clinical and therapeutic implications. Report of an interdisciplinary conference and review. Br J Dermatol 2007; 157: 649-55. https://doi.org/10.1111/j.1365-2133.2007.08068.x
15. World Health Organization, Regional Office for South-East Asia. Brief Profile on Tobacco Health Warnings in the South-East Asia Region. India, 2009. http://www.searo.who.int/LinkFiles/World_No_Tobacco_Day_profile.pdf - accessed 5th April, 2016.
16. Gyawali B, Sharma R, Neupane D, Mishra SR, van Teijlingen E, Kallestrup P. Prevalence of type 2 diabetes in Nepal: a systematic review and meta-analysis from 2000 to 2014. Glob Health Action 2015; 8: 29088. https://doi.org/10.3402/gha.v8.29088
17. Naisar N, Kulkarni N, Venugopalan A, Chopra A. Comorbidities -A realistic concern in psoriatic arthritis. Indian Journal of Rheumatology 2014; 9: S46. https://doi.org/10.1016/j.injr.2014.10.136
18. Love TJ, Qureshi AA, Karlson EW, Gelfand JM, Choi HK. Prevalence of the metabolic syndrome in psoriasis: Results from the National Health and Nutrition Examination Survey, 2003-2006. Arch Dermatol 2011; 147: 419-24. https://doi.org/10.1001/archdermatol.2010.370
19. Schmitt J, Ford DE. Psoriasis is independently associated with psychiatric morbidity and adverse cardiovascular risk factors, but not with cardiovascular events in a population based sample. J Eur Acad Dermatol Venereol 2010; 24: 885–92. https://doi.org/10.1111/j.1468-3083.2009.03537.x