

Risk Factors and Predictors of Psoriatic Arthritis in Patients with Psoriasis

Valderilio Feijó Azevedo*, Pedro Grachinski Buiar and Nathan M Catolino

Federal University of Paraná, Curitiba, Paraná, Brazil

*Corresponding author: Valderilio Feijó Azevedo, Federal University of Paraná, Curitiba, Paraná, Brazil, Tel: +554199853427; E-mail: valderilio@hotmail.com

Received date: January 28, 2016; Accepted date: June 03, 2016; Published date: June 05, 2016

Copyright: © 2016 Azevedo VF, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

The investigation of psoriatic arthritis on psoriasis patients and the optimization of the screening methods should be seen as a priority in the clinical practice due to the potential consequences involved in joint damage in psoriatic arthritis. It is already known the potential sequelae involved in joint damage in psoriatic arthritis and that they can be avoided by the identification of the disease's predictors. Furthermore, the large range of psoriasis diagnosis and diagnosis of early stage of psoriatic arthritis should be reduced. In this review, we discuss recent literature with highlights about some predictive markers of early arthritis in patients with psoriasis.

Keywords: Psoriasis; Arthritis; Psoriatic

Introduction

Psoriasis (Pso) is an immune-mediated skin disease that results in epidermal hyperproliferation. The association of psoriatic lesions with typical joint involvement is called Psoriatic Arthritis (PsA) [1]. Due to the extent of joint damage, the optimization of the screening methods and the investigation of psoriatic arthritis in psoriasis patients have been a clinical priority. This also can be explained by the gap between the Pso diagnosis and the first symptoms of PsA, which could be up to 5 years [2,3]. The aim of this review is to highlight the best clinical literature evidence about the PsA predictors in patients with Pso.

Risk Factors and Predictors

Genetic factors: different cohorts identify genes as HLA-Cw*0602, HLA-B27, HLA-B38, HLA-B39, HLA-DR4, IL-23R, IL-12R, and TNF-238A *TNIP1 in association with the susceptibility to develop both diseases. Therefore, these genes are considered risk factors in the development of PsA [4-6]. Cases of PsA in the family should be considered as well [7].

A meta-analysis of genome wide association studies (GWAS) detected differences between the genetic architecture of PsA and PsC. There was found 10 regions associated with PsA and 11 associated with Pso [8]. Besides, variants in regions near to HLA C, TNFRSF9 and LCE3A genes were associated with an increased susceptibility to develop Pso, while variants near to IL23R and TNFAIP3 were more strongly associated with PsA. The human leukocyte antigen (HLA)-HLA-B and HLA-C - also seems to confer susceptibility to develop joint symptoms in Pso patients [9].

Environmental factors

No relation between development of PsA in Pso patients and alcohol users was found, neither patients submitted a psychological stress [10]. On the other hand, Pattinson et al identified that changing residence could be a risk factor [11]. According to some references, smoking can be a protector factor in the development of PsA [10-12]. Another study has shown that smoking speeds up the arthritis process in patients who

does not have Pso [13]. Also, the obesity seems to be associated [13-15]. Soltani-Arabshahi et al identify that body mass index (BMI) is related to early development of arthritis and the PsA and patients with Pso. Recently, Ecer et al. has shown in a cohort study association between lower educational indexes and susceptibility to develop PsA in patients with Pso [12].

Woman

Although the woman has been identified as the higher risk of arthritis in patients with Pso [15], some literature shows that this risk is lower in pregnant women and those submitted to fertility treatments [16]. The exposure to female hormones also does not seem to be related with this susceptibility [10].

Immunologic factors

Thumboo et al. reported an increased risk of arthritis in patients with Pso using corticosteroids [16]. With respect to regarding immunization, Eder et al. found results that led them to do not consider immunizations as risk factors, although Pattinson et al identified an association between rubella vaccine and PsA development [11]. Infections that need antibiotics could be a risk factor [10].

Location affection

Intergluteal or perianal psoriatic lesions are considered risk factors to the development to PsA, besides involvement of more than three different areas, scalp and nails and nail dystrophy [12,15,17]. The total length occupied by the psoriatic plaques is also a risk factor [17-19]. The PASI index also was related as a predictor to the development to PsA [20].

Trauma: trauma requiring clinical intervention is related to appearance of PsA in patients with Pso [10,11]. The same as report about Koebner phenomenon [10,11,15].

Conclusion

The onset of PsA can be marked by deformities and severe limitations due to the joint involvement. However, there are many

methodological limitations in the risk study designs that difficult the external validation. It is important to identify the risk factors of the beginning of the disease, since the worst effects can be observed in the polyarthritis mutilans and axial disease. To characterize which factors can lead to early detection of joint involvement in patients with Pso, it is necessary to investigate in the cohorts with larger number of psoriatic patients. These results can help patients to have an individualized care and a more appropriate monitoring of disease's progress.

References

1. Salvarani C, Lo Scocco G, Macchioni P, Cremonesi T, Rossi F, et al. (1995) Prevalence of psoriatic arthritis in Italian psoriatic patients. *J Rheumatol* 22: 1499-1503.
2. Harrison BJ, Hutchinson CE, Adams J, Bruce IN, Herrick AI (2002) Assessing periarticular bone mineral density in patients with early psoriatic arthritis or rheumatoid arthritis. *Ann Rheum Dis* 61: 1007-1011.
3. Scarpa R, Cuocolo A, Peluso R, Attenu M, Gisonni P, et al. (2008) Early psoriatic arthritis: the clinical spectrum. *J Rheumatol* 35: 137-141.
4. Ogdie A, Gelfand JM (2015) Clinical Risk Factors for the Development of Psoriatic Arthritis Among Patients with Psoriasis: A Review of Available Evidence. *Curr Rheumatol Rep* 17: 540.
5. Tey HL, Ee HL, Tan AS, Theng TS, Wong SN, et al. (2010) Risk factors associated with having psoriatic arthritis in patients with cutaneous psoriasis. *J Dermatol* 37: 426-430.
6. Veale D, Rogers S, Fitzgerald O (1994) Classification of clinical subsets in psoriatic arthritis. *Br J Rheumatol* 33: 133-138.
7. Eder L, Chandran V, Pellett F, Pollock R, Shanmugarajah S, et al. (2011) IL13 gene polymorphism is a marker for psoriatic arthritis among psoriasis patients. *Ann Rheum Dis* 70: 1594-1598.
8. Stuart PE, Nair RP, Tsoi LC, Tejasvi T, Das S, et al. (2015) Genome-wide Association Analysis of Psoriatic Arthritis and Cutaneous Psoriasis Reveals Differences in Their Genetic Architecture. *Am J Hum Genet* 97: 816-836.
9. Eder L, Chandran V, Pellet F, Shanmugarajah S, Rosen CF, et al. (2012) Human leucocyte antigen risk alleles for psoriatic arthritis among patients with psoriasis. *Ann Rheum Dis* 71: 50-55.
10. Eder L, Law T, Chandran V, Shanmugarajah S, Shen H, et al. (2011) Association between environmental factors and onset of psoriatic arthritis in patients with psoriasis. *Arthritis Care Res. (Hoboken)* 63: 1091-1097.
11. Pattison E, Harrison BJ, Griffiths CEM, Silman AJ, Bruce IN (2008) Environmental risk factors for the development of psoriatic arthritis: results from a case-control study. *Ann Rheum Dis* 67: 672-676.
12. Eder L, Haddad A, Rosen CF, Lee KA, Chandran V, et al. (2016) The Incidence and Risk Factors for Psoriatic Arthritis in Patients With Psoriasis: A Prospective Cohort Study. *Arthritis Rheumatol* 68: 915-923.
13. Herron MD, Hinckley M, Hoffman MS, Papenfuss J, Hansen CB, et al. (2005) Impact of obesity and smoking on psoriasis presentation and management. *Arch. Dermatol* 141: 1527-1534.
14. Love TJ, Zhu Y, Zhang Y, Wall-Burns L, Ogdie A, et al. (2012) Obesity and the risk of psoriatic arthritis: a population-based study. *Ann Rheum Dis* 71: 1273-1277.
15. Soltani-Arabshahi R, Wong B, Feng BJ, Goldgar DE, Duffin KC, et al. (2010) Obesity in early adulthood as a risk factor for psoriatic arthritis. *Arch Dermatol* 146: 721-726.
16. Thumboo J, Uramoto K, Shbeeb MI, O'Fallon WM, Crowson CS, et al. Risk factors for the development of psoriatic arthritis: a population based nested case control study. *J Rheumatol* 29: 757-762.
17. Patrizi A, Venturi M, Scorzoni R, Pazzaglia M, Malavolta N, et al. (2014) Nail dystrophies, scalp and intergluteal/perianal psoriatic lesions: Risk factors for psoriatic arthritis in mild skin psoriasis? *G Ital Dermatologia Venereol* 149: 177-184.
18. Wilson FC, Icen M, Crowson CS, McEvoy MT, Gabriel SE, et al. (2009) Incidence and clinical predictors of psoriatic arthritis in patients with psoriasis: a population-based study. *Arthritis Rheum* 61: 233-239.
19. Rahman P, Butt C, Siannis F, Farewell VT, Peddle L, et al. (2005) Association of SEEK1 and psoriatic arthritis in two distinct Canadian populations. *Ann Rheum Dis* 64: 1370-1372.
20. Rouzaud M, Sevrain M, Villani AP, Barnetche T, Paul C, et al. (2014) Is there a psoriasis skin phenotype associated with psoriatic arthritis? Systematic literature review. *J Eur Acad Dermatol Venereol* 28: 17-26.