

Psoriasis and Sport

Subjects: Dermatology

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The link between Psoriasis and sport is a controversial issue. Physical activity has been associated to Pso in a negative way, even if recent studies have highlighted the potential beneficial effect on the natural course of the disease and, as consequence, on patients' quality of life (QoL).

Keywords: psoriasis ; sport ; physical activity ; exercise ; metabolic risk ; diet ; psoriatic arthritis

1. Introduction

Psoriasis (Pso) is a chronic inflammatory immune-mediated skin disease with an estimated worldwide prevalence of approximately 2–3% ^[1]. For a long time considered to be an exclusively cutaneous disorder, Pso is now recognized as a systemic inflammatory disorder sharing pathogenic pathways with many other chronic and progressive health diseases, including psoriatic arthritis, metabolic syndrome (MetS), cardio-vascular disorders, inflammatory bowel disease, uveitis, obstructive sleep apnea, non-alcoholic fatty liver disease (NAFLD), psychiatric conditions, hypoacusia ^{[2][3][4]}. In particular, Pso patients are more frequently overweight or obese than the general population, and the severity of Pso correlates to body mass index (BMI) ^[1]. The chronic course of the disease makes patients conscious that they will have to deal with this condition for the rest of their life, with a detrimental effect on every-day life. Skin involvement causes a significant physical and psychosocial burden. During life course, patients experience feelings of anger, frustration, helplessness, embarrassment, self-consciousness. The disease also dramatically impacts on sexual behavior and work productivity. Musculoskeletal involvement, presenting as peripheral arthritis, dactylitis, enthesitis and spondylitis, may further aggravate the prognosis of the patients, adding functional limitations to daily activities. The link between Pso and sport is a controversial issue. Physical activity has been associated to Pso in a negative way, even if recent studies have highlighted the potential beneficial effect on the natural course of the disease and, as consequence, on patients' quality of life (QoL). The topic has been poorly investigated, and nowadays there are many unsolved questions, dealing with the role of the skin disease in influencing the sporting habits of patients and, vice versa, the impact of sport activity on course, severity and extent of the disease, with particular regard to the indirect benefits on cardiovascular risk and metabolic syndrome potentially derived from practicing sport in a Pso context. Moreover, the role of physical activity on patients' QoL and the potential limitations on physical activity due to joint involvement have not been well elucidated until now.

2. Mutual Influence of Psoriasis and Sport

The analysis of the Literature strongly suggests a close mutual influence between sport and Pso, showing a correlation between the quantity and/or quality of sport activities and severity and course of the disease. Sport activity, through molecular mechanisms, can reduce the levels of the pro-inflammatory cytokines systemically ^{[5][6]}, with a positive influence on the chronic inflammatory state which sustains the disease. Physical activity, especially the vigorous and constant one, seems to exert a protective role rather than being an aggravating factor. It is not clear whether weight loss can be more important than a sporting activity practiced with constancy in order to improve psoriasis, even though it's reasonable that the synergic effect of both these practices can lead to better results ^{[6][7]}. Another observation that emerges is that patients would benefit mainly from aerobic sports (swimming, tennis and running), as to emphasize that the control of blood sugar and lipid levels, through a shift of metabolism, could be crucial for a more adequate control of the disease. Sport might represent a useful non-pharmacological intervention especially in patients with cardiovascular and/or metabolic comorbidities.

On the other hand, these patients, regardless of their BMI, would have a lower cardiorespiratory fitness. This element should not be underestimated: if inserted in a competitive context, the earlier onset of fatigue can affect the performance of the patient with negative psychological (poor competitiveness by the athlete and loss of aims) and economic (less probability to receive endorsements to further their careers) consequences ^[8]. From our review, no significant differences emerge between outdoor and indoor sports. However, if we consider that heliotherapy provides strong reliefs on psoriatic

symptoms, as demonstrated by several studies, we may hypothesize that performing physical activities in an outdoor setting should improve skin lesions both directly, via the anti-inflammatory effects of UV rays, and indirectly, increasing Vitamin D3 production. A few studies have focused on skin improvement through weight loss with diet alone. The loss of fat mass can reduce joint overload thus facilitating sports activity with a positive feedback mechanism. Furthermore, lowering the levels of oxidative stress due to the abundance of fat and restoring the right ratio of lean/fat mass, may facilitate physical activity. Sporting, in the end, could be considered a fundamental adjuvant in the process of slimming, especially in Pso patients often affected by concomitant obesity [9][10]. About half of the studies examined deal with QoL (10). It is well-known that Pso is considered a social stigma because of its localization in always exposed areas like face and hands, thus representing a constant source of embarrassment. Pso is also time- and money-consuming, as it requires continuous purchase and use of creams that should be applied even more times per day. This fundamental aspect of the life of each patient is investigated through special questionnaires, such as DLQI, an essential tool for the dermatologist when dealing with the patient and for the best treatment outcomes, used in most of the above reported studies. From their analysis, it emerges that a cluster of patients sharing specific characteristics (old-aged females, unemployed, without a partner) consider sports as an irrelevant aspect of their daily lives or do not see psoriasis as a limiting factor. This may result from a lack of knowledge of your own disease and/or from the devaluation of the importance of sport in the context of a healthy and balanced life. It is interesting to note that these conditions, in turn, are associated with a greater risk of cardiometabolic and psychiatric diseases and, if neglected from the beginning, can lead to an aggravation of the same conditions. For the elderly, we can hypothesize that a healthy lifestyle, including a constant physical activity before the onset of the disease, might produce better results in controlling it, especially since changing habits can prove difficult in later years [11]. It is reasonable to assume that it's better to begin before or continue exercising after the onset of Pso: in this way, the initial embarrassment associated with skin manifestations might disappear and would not represent an obstacle when practicing outdoor sports or with partners. This point can be deduced from the study related to swimming habits among minors: it is reasonable to assume that a young patient still wants to experience various sports and has not yet established preferences. Swimming, moreover, unlike other lighter physical activities such as walking, is very often inserted in the recreational context of travel, holidays in sea locations, where one can perform other activities in the water that require the ability to swim (water polo, etc.). It is worth noting, as well, that in one study the authors researched also other parameters that can actually be object of interest in subsequent studies (such as household size and marital status) in their relation with Pso [12].

Particular subsets of Pso could be more related to the abandonment of sporting activity: for example, arthropathic or acral involvement certainly represents a physical and psychological obstacle to many sports (volleyball, basketball, etc.). The course of the disease could also be an incentive to abandonment: the sudden outburst and spread of the disease might cause feelings of shame, accelerating the forced withdrawal from training. Pso can also affect sportswear. Patients tend to adopt more covering outfits, in order to protect the affected areas of the body from sight, choosing colors to help mask any bloodstains or silvery scales [13]. A change in the times of practice of sports may be useful as to avoid the hottest hours of the day, thus preventing excessive sweating. Pso can also limit the practice of contact sports, in which the close distance between the players may expose patients to embarrassment. About psoriatic arthritis, the data of the literature are very limited, with few anecdotal reports and lack of studies on significant cohorts of patients, though the topic appears of great interest in both amateur and professional settings. Early application of non-invasive diagnostic procedure like ultrasound examination has proved to be effective in demonstrating PsA involvement of joints and tendons and is more sensitive than clinical examination in detecting the underlying pathology [14]. In this regard, instrumental screening might be proposed in sportsmen with familial and personal history of Pso to assess the risk to develop or worsen musculoskeletal damage by inappropriate physical activities, thus allowing the prosecution of a safe sporting life or addressing patients to a practice sports more safely.

3. Conclusions

Psoriasis has an impact on many aspects of the daily life of the patients, and the role played by sport in the quality of life seems relevant even if underestimated. There is still much to investigate about the influence of different types of sport on Pso and psoriatic arthritis at both molecular and clinical levels. In particular, the relationship between physical activity and severity of Pso in patients with cardiovascular and/or metabolic comorbidities may be of help to better understand the mechanisms underlying different ways of presentation of a unique chronic inflammatory state. Sports may represent a striking non-pharmacological resource in complex patients like the psoriatic ones, especially within programs of education and promotion of a healthier lifestyle.

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