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COMMENTARY

Ocular complications in patients with psoriasis: Is dry eye associated with psoriasis?

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Psoriasis is a chronic inflammatory skin condition with a significant genetic component and autoimmune characteristics. It is marked by the proliferation of epidermal keratinocytes, inflammatory infiltration in the dermis and heightened angiogenesis. Psoriasis is linked to numerous comorbidities, including psoriatic arthritis (PsA), cardiovascular disease, depression, diabetes, inflammatory bowel disease and ocular diseases.[1]

Psoriasis patients may experience various ocular manifestations and dry eye syndrome (DES) is a common problem, evidenced by decreased tear breakup time and lower Schirmer's test results, as well as symptoms of meibomian gland dysfunction (MGD).[2]

DES leads to instability of the tear film, hyperosmolarity and inflammation on the ocular surface. This can result in eye irritation, redness and mucous discharge, along with considerable visual disruptions. Such symptoms can affect daily activities including driving, reading and using a computer, and may also have a negative effect on psychological well-being.

A recent study by Nowowiejska[3] assessed the DES prevalence among 80 psoriatic patients and 80 healthy controls using the Ocular Surface Disease Index (OSDI) questionnaire, along with an objective examination that employed an automated ocular surface analyzer (IDRA®). This non-invasive test enables a quick, detailed analysis of all the tear film layers (lipid, aqueous and mucin layers) as well as the meibomian glands.

Nowowiejska and colleagues identified only two objective parameters related to DES that were significantly elevated in psoriasis patients compared to controls. The lipid layer thickness in psoriasis patients was significantly increased compared to controls ($p = 0.0042$ OS, $p = 0.0313$ OD), although the measurements remained within normal ranges. This parameter is typically reduced in DES patients, which may be attributed to the high BMI in the psoriasis group. Indeed, dyslipidaemia, inflammation, obesity, decreased proliferative properties of meibocyte and acinar atrophy and alteration of biosynthesis and the changing composition of meibum are interrelated in the pathogenesis of MGD and DES.[4]

Furthermore, in this study, patients exhibited a statistically significant greater loss of meibomian glands than the control group ($p = 0.0128$ OS, $p = 0.048$ OD). It is known that a chronic, diffuse abnormality of the meibomian glands, characterized by terminal duct obstruction and/or qualitative or quantitative changes in glandular secretion, may lead to alterations in ocular surface health and homeostasis.

Moreover, as indicated by other research, this study has determined no significant link between the severity of psoriasis and eye symptoms. They also observed an upward trend for nail involvement with PASI, as well as nail involvement and the presence of PsA.

Many authors have highlighted the association between psoriasis and DES and have further indicated that PsA patients are at an increased risk of developing ocular diseases.

DES requires special attention as it can lead to severe complications, such as inflammation and cornea injury, which may result in varying degrees of vision disturbances. Moreover, the disease's troublesome symptoms and chronic nature significantly reduce the quality of life.

Thus, it is highly recommended that regular ophthalmologic evaluations of psoriasis patients be conducted.

In addition, the relationship between BMI, dyslipidaemia and DES needs efforts to conduct randomized controlled trials to establish the role of serum lipid level and meibocyte differentiation/maturation and lipid synthesis.

Linked article: J. Nowowiejska et al. J Eur Acad Dermatol Venereol 2024;38:1522–1530. https://doi.org/10.1111/jdv.19773.

Recent research has underscored the crucial role of T helper17 cells in the pathogenesis of psoriasis and certain ocular surface conditions. The presence of interleukin (IL)-17 has been noted not only in systemic autoimmune diseases but also in DES. IL-17 promotes the release of several proinflammatory cytokines, including IL-6, TNF-α, IL-1 and IL-8 by immunological, stromal and epithelial cells, which makes patients more susceptible to ocular diseases.[5]

Therefore, IL-17 inhibition could be beneficial in treating ocular disease in patients with psoriasis.

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CONFLICT OF INTEREST STATEMENT
The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT
Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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