Ocular manifestations in psoriasis: a narrative bibliographic review

Manifestações oculares na psoríase: uma revisão bibliográfica narrativa

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ABSTRACT
Introduction: Psoriasis is an immune-mediated, inflammatory and chronic disease, being considered systemic for the wide range of body systems it can affect. Ocular involvement is present in 10-12% of all psoriatic patients, but is often a neglected and underappreciated manifestation. Objective: This article aims to elucidate the main ocular manifestations related to psoriasis. Development: The research was based on a narrative bibliographic review of reports from the National Library of Medicine (NLM), the Scientific Electronic Library Online (Scielo), Google Scholars and Federal University of Bahia databases. As a result, the authors could describe ocular manifestations in psoriasis, related to specific eye sites: eyelids, conjunctiva, cornea, uvea, and lens- and their main symptoms. Uveitis, conjunctivitis, blepharitis, xerosi, and keratoconjunctivitis sicca can be highlighted as the most prevalent ocular symptoms. Final Considerations: Ocular manifestations in psoriatic patients are a prevalent site of involvement and may lead to ophthalmologic complications. To guarantee psoriatic patients a better prognosis and quality of life, it is of considerable importance to make a detailed investigation of ocular symptoms by both dermatologists and ophthalmologists in those patients.

Keywords: psoriasis, ophthalmology, dermatology, symptoms, relation, eye manifestations.

RESUMO

Introdução: A psoríase é uma doença imunomédica, inflamatória e crônica, sendo considerada sistêmica para a ampla gama de sistemas corporais que pode afetar. O envolvimento ocular está presente em 10-12% de todos os pacientes psoriáticos, mas é freqüentemente uma manifestação negligenciada e subvalorizada. Objetivo: Este artigo visa elucidar as principais manifestações oculares relacionadas à psoríase. Desenvolvimento: A pesquisa foi baseada em uma revisão bibliográfica narrativa de relatórios da Biblioteca Nacional de Medicina (NLM), da Scientific Electronic Library Online (Scielo), do Google Scholars e das bases de dados da Universidade Federal da Bahia. Como resultado, os autores puderam descrever manifestações oculares na psoríase, relacionadas a sítios oculares específicos: pálpebras, conjuntiva, córnea, uvea e lentilhas - e seus principais sintomas. Uveíte, conjuntivite, blefarite, xerosi e queratoconjuntivite sicca podem ser destacados como os sintomas oculares mais prevalentes. Considerações finais: As manifestações oculares em pacientes psoriásicos são um local prevalente de envolvimento e podem levar a complicações oftalmológicas. Para garantir aos pacientes psoriásicos um melhor prognóstico e qualidade de vida, é de considerável importância fazer uma investigação detalhada dos sintomas oculares, tanto por dermatologistas quanto por oftalmologistas nesses pacientes.

Palavras-chave: psoríase, oftalmologia, dermatologia, sintomas, relação, manifestações oculares.

1 INTRODUCTION

Psoriasis is an inflammatory, immune-mediated disease with a chronic evolution and high genetic susceptibility. It is considered not only a dermatologic disease, but also a systemic one due to its wide range of clinical manifestations, being associated with cardiovascular, articular, hepatic, metabolic, autoimmune, and ocular damage- among others (Constantin, 2021) (Teixeira, 2015). It can be considered the most frequent dermatosis globally, affecting between 1% - 3% of the adult population, and is known to have a significantly negative impact on the patients' quality of life (Chandran, 2007) (Cruz, 2018).

Ocular involvement in psoriasis is a widespread condition, with prevalence between 10% - 12% among psoriatic patients, and it appears to be more frequent in men. Even so, it is often neglected or underappreciated among professionals and patients, suggesting this percentage could be underrated (Chandran, 2007) (Rehal, 2011).

Psoriasis' systemic inflammation physiopathology is considered to be the main contributor to ophthalmologic injuries, such as the direct eye involvement with psoriatic plaques and treatment complications (Campanati, 2014).

2 MATERIALS AND METHODS

The narrative bibliographic review was conducted according to the parameters established by SANRA (Scale for the quality Assessment of Narrative Reviews Articles). Publications were accessed between February 18 and 20 of 2021. The following mesh terms were selected for the search: "Psoriasis", "Eye manifestations", "Ophthalmology".

The research was carried out without a temporal filter in the National Library of Medicine (NLM), the Scientific Electronic Library Online (Scielo), Google Scholars and Federal University of Bahia databases. After researching and analyzing references, 15 studies were selected.

3 RESULTS

Ocular symptoms observed in psoriatic patients can be caused by etiopathogenic aspects of psoriasis, especially its immune-mediated inflammatory mechanism. Also, embryologically, skin and eyes share a common origin from the ectoderm. Direct eye involvement with psoriatic plaques can be another source of ophthalmologic involvement (Campanati, 2014) (Constantin, 2021).

Psoriasis treatment strategies can also be a causative factor to ophthalmologic manifestations. Phototherapy can potentially induce cataract due to the penetration of UVA rays into the ocular lens if the patient does not wear proper ocular protection during sessions. Furthermore, treatments for pustular psoriasis -like methotrexate and acitretin- and biological therapies may cause ocular damage (Nichols, 2004).

The eyelids and the conjunctiva are primary sites of ocular involvement, considering they are both mainly epithelial. Its symptoms usually occur during disease exacerbation, being uveitis, conjunctivitis, blepharitis, xerosis and keratoconjunctivitis sicca the most common of them (Constantin, 2021) (Kilic, 2013).

The OcmaPs (Ocular manifestations in the Psoriasis Screening) questionnaire was developed on the bases of the OMIS (Ocular Manifestations in Inflammatory Bowel Diseases Screening) questionnaire (Table 1) and has the purpose of gathering data about ocular symptoms among psoriatic patients. This questionnaire pins down which patients necessitate an ophthalmologic evaluation, corroborating an earlier diagnosis and treatment. It also provides a relevant investigation of ocular manifestations prevalence among psoriasis subjects (Ruggiero, 2021).

It is possible to subdivide the main sites of ocular involvement in psoriasis and their respective clinical manifestations, elucidated in the following paragraphs.

Table 1 *OcMaPS (Ocular Manifestations in Psoriasis Screening) questionnaire.*

Section A: Demographic Clinical and Disease Features	**Section B: Eye Involvement**
1. Surname and name 2. Birthdate 3. Age 4. Sex: M/F 5. Comorbidities: (a) Hypertension (b) Dyslipidemia (c) Depression (d) Cardiopathy (e) Other (please specify) 6. Psoriasis: YES/NO 7. Psoriasis duration (in years) 8. Psoriatic arthritis: YES/NO 9. Psoriatic arthritis duration time (in years) 10. Current treatment(s): (a) Phototherapy (b) Cyclosporine (c) Methotrexate (d) Acitretin (e)Etanercept (f) Adalimumab (g) Infliximab (h) Secukinumab (i) Ixekizumab (l) Brodalumab (m) Certolizumab (n) Ustekinumab (o) Guselkumab (p) Risankizumab (q) Tildrakizumab (r) Golimumab (s) Apremilast	1. Is any member of your family affected by any of the following eye diseases? (a) Uveitis (b) Glaucoma (c) Cataracts (d) Retinal detachment 2. Are you under therapy with ocular drugs? YES/NO 3. Which one/ones? 4. Have you ever been diagnosed with: (a) Dry eye (b) Uveitis (c) Scleritis (d) Episcleritis (e) Conjunctivitis (f) Other (ocular) 5. In the last 3 months have you suffered from: (a) Red eye, mono/bilateral (b) Eye pain (c) Photophobia (persistent discomfort to light) (d) Visual fogging or persistent visual impairment for at least 24 h, mono/bilateral 6. Have you practiced eye therapy with eye drops in the last 3 months? 7. In the case of a diagnosis ascertained by the ophthalmologist of uveitis/scleritis/episcleritis, how many episodes occur per year? (a) One to two (b) Three to six (c) More than six 8. Did the only treatment with eye drops resolve the symptoms? YES/NO 9. Has it been necessary to use oral or systemic drugs? YES/NO 10. Since the diagnosis of psoriasis, did you have ocular manifestations? YES/NO 11. Referral to the ophthalmologist: YES/NO

3.1 EYELIDS

Blepharitis is one of the most common ocular manifestations among patients with psoriasis. It manifests as hyperemia, inflammation and edema at the free margin of the eyelids, with a slight scaling, itching, and burning sensation. Other symptoms, such as a red swollen lid appearance -sometimes also flaky and crusted- and the presence of scales on the lashes are common (Cruz, 2018) (Paim De Oliveira, 2012) (Dekker, 1998).

Chronic blepharitis may lead to ectropion of the lower lacrimal point, with epiphora, madarosis, trichiasis, loss of lid tissue, or meibomian gland dysfunction-

frequently associated with posterior blepharitis and vision impairment. In cases of pustular psoriasis, the eyelid involvement is characterized by the presence of pustules on an erythematous base (Cruz, 2018) (Rehal, 2011).

Adequate lid hygiene is established for the patient with eyelid massage, warm compresses and lid scrub with baby shampoo-based formula for symptom control. Corticosteroids may be prescribed in cases of psoriatic plaques on eyelids. In cases of no response to the treatment, surgery may be an option (Cruz, 2018).

3.2 CONJUNCTIVA

The most common conjunctiva manifestation in psoriasis is a chronic, nonspecific conjunctivitis. Patients affected by the disease may present hyperemia, trichiasis, symblepharon, and possible eyelid margin lesions -demarcated, yellowish-red plaques on the palpebral conjunctiva or xerotic appearance areas on the bulbar conjunctiva. (Cruz, 2018) (Rehal, 2011) (Dekker, 1998).

Prevalent symptoms are the feeling of grittiness or foreign bodies in the eyes, pain, conjunctival secretions, blurry vision, and photophobia, usually worsening throughout the day. Psoriasis plaques on conjunctiva sites occur more commonly separated than extended from the eyelid (Cruz, 2018) (Jäger, 2010) (Paim De Oliveira, 2012) (Huynh, 2008).

Dry eye syndrome can be a result of systemic autoimmune diseases. In patients with psoriasis, there is an obstructive dysfunction of the excretory ducts of the meibomian glands. An L-arginine deficiency and increased b-defensin production in psoriasis can also be detected. Furthermore, alterations can be observed involving the human cationic amino acid transporter (responsible for the transport of 80% of L-arginine in mammalian cells), which shows to have a reduced concentration in the stratum granulosum of psoriatic skin and may be associated with the decrease of the tear film (Huynh, 2008) (Jäger, 2010) (Rehal, 2011).

3.3 CORNEA

Corneal involvement is a rarer condition among psoriatic patients when compared to other sites and is usually characterized by epithelial keratitis. It is often described as a complication of conjunctival involvement symptoms, such as xerosis and trichiasis. Scarring, erosions, stromal infiltrates, superficial or deep opacities, stromal melts and

neovascularization can also be observed. Lesions are usually bilateral, located more frequently toward the limbus (Cram M.D., 1981) (Rehal, 2011).

The components that are compromised by psoriasis corneal involvement, according to Pillat A., are an infiltrated zone under the Bowman layer with superficial vascularization, a thickening of the epithelium with erosions, and a homogenous deep stromal opacity. A histological characteristic similar to psoriasis skin lesions is the parakeratosis of the corneal epithelium, illustrated in opacities with thickened and vascularized epithelium (Rehal, 2011).

Some treatments for psoriasis can also cause eye involvement: the use of intravenous methotrexate may be the source of ocular complications such as dry eye symptoms, keratitis, and conjunctival injection. Also, poorly-fitting eye protection during phototherapy can instigate UV keratitis, leading to eye pain several hours after treatment (CramM.D., 1981) (Rehal, 2011).

3.4 UVEA

Uveitis is a rare but severe eye manifestation which occurs in patients with psoriasis. The involvement of the uvea in psoriasis tends to be extended, bilateral and more intense, being anterior uveitis a frequent presentation, occuring in 7-12% of patients. The symptoms include red, painful eyes with pericorneal congestion, reduction or even loss of visual acuity. Photophobia may also be observed (Cruz, 2018) (Rehal, 2011).

There is an association between uveitis and different types of psoriasis, being more usual among patients with HLA B27-positive psoriatic arthritis. However, the correlation is not fully understood. There are immunological disturbances in the Th1 and Th17 lymphocyte populations in both psoriasis and uveitis, as well as similar immune etiopathogenetic mechanisms (Cruz, 2018).

3.5 LENS

Patients with psoriasis can develop cataracts, according to previous studies. Lens abnormalities are characterized by gradually declining vision, glare around lights, decreased contrast sensitivity, and visualization of cloudy lenses on routine ophthalmological examination- being typically considered to be incidental findings. High doses of systemic corticosteroid therapy, for extended periods, and PUVA therapy can be a cause of posterior subcapsular or anterior cataracts, respectively (Cruz, 2018) (Rehal, 2011).

4 CONCLUSION

The present narrative bibliographic review described the ocular manifestations of psoriasis. As a result, a high frequency of ophthalmologic complications associated with psoriasis was evidenced, which can affect almost any part of the eye and compromise visual function permanently if not treated properly. Even so, they remain clinically neglected and underappreciated, highlighting the necessity of a multidisciplinary approach, including both dermatologists and ophthalmologists, to individuals affected by psoriasis.

The early diagnosis and treatment of ocular symptoms proves to be of extreme relevance in order to guarantee them a better prognosis. Consequently, it is recommended for psoriatic patients to have ophthalmological examinations at regular intervals.

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