



ACTAS Dermo-Sifiliográficas

Full English text available at
www.actasdermo.org



CONSENSUS DOCUMENT

[Translated article] Moderate to Severe Psoriasis in Older Adults: Recommendations on Management From the Psoriasis Working Group of the Spanish Academy of Dermatology and Venereology (AEDV)



J. Mataix^a, L. García^b, I. Belinchón^{c,*}, J.C. Ruiz Carrascosa^d, P. de la Cueva^e, J.M. Carrascosa^f

^a Departamento de Dermatología, Hospital Marina Baixa de Villajoyosa, Alicante, Spain

^b Departamento de Dermatología, Hospital Universitario San Juan, Alicante, Spain

^c Departamento de Dermatología, Hospital General Universitario Dr. Balmis – ISABIAL-UMH, Alicante, Spain

^d Departamento de Dermatología, Hospital Universitario Clínico San Cecilio, Granada, Spain

^e Departamento de Dermatología, Hospital Universitario Infanta Leonor, Madrid, Spain

^f Departamento de Dermatología, Hospital Universitari Germans Trias i Pujol, Universitat Autònoma de Barcelona, Badalona, Spain

Received 25 April 2023; accepted 6 May 2023

Available online 26 July 2023

KEYWORDS

Plaque psoriasis;
Moderate–severe
psoriasis;
Aged;
Advanced age;
Consensus;
Delphi process;
Therapeutics

Abstract Managing moderate to severe psoriasis in older adults is complex due to factors characteristic of the later years of life, such as associated comorbidity, polypharmacy, and immunosenescence. This consensus statement discusses 17 recommendations for managing treatment for moderate to severe psoriasis in patients older than 65 years. The recommendations were proposed by a committee of 6 dermatologists who reviewed the literature. Fifty-one members of the Psoriasis Working Group of the Spanish Academy of Dermatology and Venereology (AEDV) then applied the Delphi process in 2 rounds to reach consensus on which principles to adopt. The recommendations can help to improve management, outcomes, and prognosis for older adults with moderate to severe psoriasis.

© 2023 AEDV. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

DOI of original article: <https://doi.org/10.1016/j.ad.2023.05.016>

* Corresponding author.

E-mail address: belinchon.isa@gva.es (I. Belinchón).

<https://doi.org/10.1016/j.ad.2023.07.016>

0001-7310/© 2023 AEDV. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

PALABRAS CLAVE

Psoriasis en placas;
Psoriasis
moderada-grave;
Anciano;
Edad avanzada;
Consenso;
Delphi;
Tratamiento

Recomendaciones del Grupo de Psoriasis de la Academia Española de Dermatología y Venereología sobre el manejo del paciente de edad avanzada con psoriasis en placas moderada-grave

Resumen El abordaje terapéutico de pacientes de edad avanzada con psoriasis en placas moderada-grave es complejo debido, entre otros factores, a las comorbilidades asociadas, a la polimedicación y a la inmunosenescencia propias de este grupo de edad. En el presente documento se recogen 17 recomendaciones para el manejo de la psoriasis moderada-grave en pacientes de edad avanzada (>65 años). Estas recomendaciones han sido propuestas por un comité científico de seis dermatólogos a partir de una revisión de la literatura científica y consensuadas entre 51 miembros del Grupo de Psoriasis de la Academia Española de Dermatología y Venereología mediante dos rondas de consulta Delphi. En los pacientes con psoriasis moderada-grave de edad avanzada, estas recomendaciones pueden mejorar su manejo, los resultados y el pronóstico.

© 2023 AEDV. Publicado por Elsevier España, S.L.U. Este es un artículo Open Access bajo la licencia CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Due to the chronic nature of psoriasis and the increasing life expectancy of the population, older adults constitute a growing subgroup among patients with this disease.¹ It is estimated that 13% of patients with psoriasis experience their first symptoms after 60 years of age, and that approximately 15% of this subgroup develop moderate to severe disease.²

However, since elderly patients are usually excluded from clinical trials, only limited evidence is available on the efficacy and safety of therapy in this subgroup.³ Furthermore, the management of psoriasis in this population is more complex owing to the increased risk of adverse effects (AE) in older patients and the greater prevalence of comorbidities, polypharmacy and immunosenescence.⁴ As a result, biologic therapies are prescribed more often in younger than in older patients^{1,2} and there may be an unjustified tendency to undertreat elderly patients.⁵

These circumstances have given rise to the need for a therapeutic approach that can afford the dermatologist greater confidence and security in the management of psoriasis in older patients. The aim of the present study was to develop evidence-based recommendations on the management of moderate to severe plaque psoriasis in patients aged over 65 years.

Material and Methods

A Delphi exercise was carried out with members of the Psoriasis Group of the Spanish Academy of Dermatology and Venereology (AEDV). The questionnaire used in the first round was developed on the basis of a review of the literature and the advice of a scientific committee composed of 6 expert dermatologists (JM, JCRC, IB, LG, SMC, PC). The initial questionnaire comprised 34 statements. The members of the expert panel rated their degree of agreement on a 9-point Likert scale. Consensus was defined as at least 75% of the panelists expressing some degree of agreement (7–9) or disagreement (1–3). Statements on which the panel did

Table 1 Sociodemographic and Professional Variables.

Variable	Value (total = 51)
Female, % (n)	51.0 (26)
Mean age (SD)	49.8 (8.9)
Years working as a specialist, mean (SD)	21.1 (9.5)
<i>Autonomous Community where currently practicing, % (n)</i>	
Andalusia	13.7 (7)
Aragon	3.9 (2)
Asturias	3.9 (2)
Balearic Islands	0.0 (0)
Canary Islands	3.9 (2)
Cantabria	2.0 (1)
Castile-La Mancha	0.0 (0)
Castile and Leon	0.0 (0)
Catalonia	23.5 (12)
Ceuta and Melilla	0.0 (0)
Valencia	13.7 (7)
Extremadura	2.0 (1)
Galicia	3.9 (2)
La Rioja	0.0 (0)
Madrid	17.6 (9)
Murcia	2.0 (1)
Navarre	5.9 (3)
Basque country	3.9 (2)

not reach consensus in the first round were restated in the second round.

Results

The questionnaire was sent to all the members of the Psoriasis Group ($n=151$); a response was received from 51 members in the first round (33.8% response rate) and 38 of those (74.5%) in the second round (Table 1).

Consensus was achieved on 22 of the 34 statements (13 in the first and 9 in the second round) (Table 2). Based on these results, the scientific committee proposed 17 recommendations, grouped into 5 blocks according to topic (Table 3).

Table 2 Results of the Delphi Method.

Item	%		
	D	U	A
GENERAL INFORMATION			
Real-world studies in elderly patients with moderate to severe plaque psoriasis are needed to obtain more information on the natural history of psoriasis in this setting, the impact of comorbidities, and the efficacy and safety of the available treatments in this population.	2.0	7.8	90.2*
Treatments for elderly patients with moderate to severe plaque psoriasis should be chosen with a view to simplifying the treatment regimen (minimizing hospital visits, monitoring, laboratory testing, and favoring administration in the hospital, etc.).	2.0	3.9	94.1*
HEALTH-RELATED QUALITY-OF-LIFE			
Health-related quality-of-life questionnaires should be designed specifically for elderly patients with moderate-to-severe plaque psoriasis.	3.9	11.8	84.3*
The quality-of-life of people living with elderly patients who have moderate to severe plaque psoriasis should also be assessed (for example using the Family Dermatology Life Quality Index (FDLQI)).	5.3	7.9	86.8
INFORMATION AND EDUCATION			
The education of elderly patients with moderate to severe plaque psoriasis should include additional elements not relevant to younger patients (for example, patient support programs, visual/educational materials, nurse visits, etc.). These should be programmed periodically during follow-up.	3.9	11.8	84.3
TOPICAL TREATMENTS			
Long-term therapy with topical treatments alone should be considered a first-line treatment in elderly patients with moderate to severe plaque psoriasis.	81.6	10.5	7.9
Topical treatments are not recommended for the treatment of moderate to severe plaque psoriasis in elderly patients who do not have assistance in applying the medication.	3.9	9.8	86.3*
PHOTOTHERAPY			
Phototherapy should be considered a first-line treatment in elderly patients with moderate to severe plaque psoriasis.	31.6	23.7	44.7
CONVENTIONAL SYSTEMIC THERAPY			
Conventional systemic drugs (with the exception of ciclosporin) should be considered first-line treatments in elderly patients with moderate to severe plaque psoriasis.	28.9	10.5	60.5
The dose of conventional systemic drugs prescribed to elderly patients with moderate to severe plaque psoriasis should generally be lower than those prescribed to younger adult patients.	9.8	13.7	76.5
Elderly patients with moderate to severe plaque psoriasis receiving conventional systemic treatment should be monitored more often than younger patients (clinical assessment and laboratory testing).	2.6	13.2	84.2
Owing to their poor tolerability and accumulative toxicity, conventional systemic drugs should only be used for short periods (less than 6-12 months) in elderly patients with moderate to severe plaque psoriasis.	31.6	15.8	52.6
Conventional systemic drugs should be used in combination with topical treatments in elderly patients with moderate to severe plaque psoriasis to minimize the dose of the systemic drug while alleviating symptoms.	13.2	28.9	57.9
Methotrexate			
In elderly patients with moderate to severe plaque psoriasis, treatment with methotrexate should be started at low doses (5-7.5 mg) followed by a gradual increase in the dose depending on tolerance, efficacy, and toxicity.	10.5	2.6	86.8
Treatment with methotrexate is not advised elderly patients with moderate to severe plaque psoriasis who are taking non-steroidal anti-inflammatories, diuretics (furosemide, thiazide diuretics), isoniazid, or other medicines, including penicillins, sulphonamides, antiepileptics (barbiturates, phenytoin), colchicine, dipyridamole, ethanol, sulphonylureas, and trimethoprim-sulfamethoxazole.	5.9	9.8	84.3*
Elderly patients taking methotrexate for moderate to severe plaque psoriasis should take higher doses of folic acid than those prescribed for younger patients.	15.8	55.3	28.9

Table 2 (Continued)

Retinoids (acitretin)			
The dose of acitretin prescribed to elderly patients for moderate to severe plaque psoriasis should, in general, be lower than that prescribed in younger populations, particularly at the start of treatment.	5.3	18.4	76.3
Acitretin should be the first choice of treatment in elderly patients with moderate to severe plaque psoriasis in preference to other conventional systemic drugs or biologic agents.	18.4	21.1	60.5
Ciclosporin			
Treatment with ciclosporin is not recommended in elderly patients with moderate to severe plaque psoriasis.	3.9	19.6	76.5*
Dimethyl fumarate			
In elderly patients with moderate to severe plaque psoriasis, dimethyl fumarate can be a first-line treatment option, taking into account the dosing regimen and the possible initial adverse effects.	60.5	23.7	15.8
BIOLOGIC THERAPIES			
Patient age (as an isolated factor) should not be seen as a limitation when considering biologic therapy.	2.0	5.9	92.2*
Biologic drugs are a better treatment option than conventional systemic drugs in elderly patients with moderate to severe plaque psoriasis.	0.0	11.8	88.2*
Elderly patients with moderate to severe plaque psoriasis receiving treatment with biologic drugs must be more closely monitored than younger patients.	26.3	23.7	50.0
Intermittent biologic treatment can be an option in elderly patients with moderate to severe plaque psoriasis who have achieved remission of their symptoms with treatment.	5.3	26.3	68.4
In elderly patients with moderate to severe plaque psoriasis who achieve remission, an attempt should be made to optimize the biologic regimen (by reducing the dose or increasing intervals) with respect to the regimen established in the Summary of Product Characteristics.	5.9	5.9	88.2*
Anti-TNF-α (etanercept, infliximab, adalimumab and certolizumab pegol)			
In elderly patients with moderate to severe plaque psoriasis, cardiac function should be assessed before starting treatment with a TNF- α inhibitor.	2.6	18.4	78.9
In elderly patients with moderate to severe plaque psoriasis, other biologic drugs should be prioritized over TNF- α inhibitors.	2.6	18.4	78.9
Anti-IL-17 (secukinumab, ixekizumab and brodalumab)			
In elderly patients with moderate to severe plaque psoriasis refractory to several treatments (conventional systemic drugs and/or biologic agents), IL-7 inhibitors should be considered to be a safe and effective treatment option.	0.0	5.9	94.1*
Anti IL-12/23p40 (ustekinumab) and anti-IL-23p19 (guselkumab, risankizumab and tildrakizumab)			
In elderly patients with moderate to severe plaque psoriasis, IL-12/23p40 and IL-23p19 inhibitors should be considered a good treatment option given the convenience of the dosing regimen.	0.0	0.0	100.0*
In elderly patients with moderate to severe plaque psoriasis refractory to several treatments (conventional systemic drugs and/or biologic agents), IL-23p19 inhibitors should be considered a safe and effective treatment option.	0.0	0.0	100.0*
SMALL MOLECULES (apremilast)			
In elderly patients with moderate to severe plaque psoriasis, treatment with apremilast should be prioritized over biologic therapy.	63.2	23.7	13.2
Treatment of moderate to severe plaque psoriasis with apremilast should be monitored more often in elderly patients than in younger age cohorts.	60.5	34.2	5.3
OTHER IMPORTANT CONSIDERATIONS			
Elderly patients with moderate to severe plaque psoriasis should routinely be vaccinated against herpes zoster.	10.5	13.2	76.3
In elderly patients with moderate to severe plaque psoriasis, a colonoscopy should be performed to screen for colon cancer prior to starting therapy with any biologic drug, given the increased prevalence of colon cancer in this age cohort.	73.7	21.1	5.3

Abbreviations: A, agreement (7, moderately agree; 8, agree; 9, strongly agree); D, disagreement (1, strongly disagree; 2, disagree; 3, moderately agree); IL, interleukin; TNF, tumor necrosis factor; U, undecided (4, mildly disagree; 5, neither agree nor disagree; 6, mildly agree).

*Agreement achieved in first round of the Delphi exercise.

Bold face indicates consensus (>75% of participants in agreement or disagreement).

Table 3 Recommendations Agreed by Consensus.**Quality-of-life Assessment**

Recommendation 1. Develop HRQoL questionnaires specifically tailored to elderly patients with moderate to severe plaque psoriasis.

Recommendation 2. Assess the HRQoL of people living with elderly patients who have moderate to severe plaque psoriasis.

Supplementary Education

Recommendation 3. Provide patients with supplementary education concerning aspects of the disease specific to older patients on a regular basis during follow-up (for example, patient support programs, visual educational materials, nurse visits, etc.).

Vaccination

Recommendation 4. Consider routine vaccination against herpes zoster in elderly patients with moderate to severe plaque psoriasis.

Evidence Generation

Recommendation 5. Promote research and studies of real-world clinical practice that include older patients with moderate to severe psoriasis.

Treatment

Recommendation 6. Prioritize the simplification of treatment regimens when choosing a therapy.

Recommendation 7. Long-term single-drug topical therapies should not be considered a first-line treatment option, especially in elderly patients with physical limitations who have no one to assist them in the application of the treatment.

Recommendation 8. Older patients should generally be prescribed lower doses of conventional systemic treatment than those used in the younger population and clinical and laboratory monitoring should be more frequent.

Recommendation 9. Treatment with methotrexate should be started at low doses (5–7.5 mg) and increased gradually while closely monitoring tolerance, efficacy, and toxicity. Methotrexate is not recommended in patients taking non-steroidal anti-inflammatory drugs, diuretics, isoniazid, or a number of other medications, including penicillins, sulfonamides, antiepileptics, colchicine, dipyridamole, ethanol, sulfonylureas, and trimethoprim-sulfamethoxazole.

Recommendation 10. In older patients, acitretin should generally be administered at lower doses than those indicated for younger patients, particularly at the start of treatment.

Recommendation 11. Treatment with ciclosporin is not recommended for the treatment of moderate to severe psoriasis in elderly patients.

Recommendation 12. As an isolated factor, age should not be considered a limitation when considering biologic therapy for the management of psoriasis.

Recommendation 13. Biologic agents are, on the whole, more effective and better tolerated than conventional systemic treatments.

Recommendation 14. Due to the convenience of their dosing regimens, drugs targeting IL-12/23p40 and IL-23p19 are a good option in both first and subsequent lines of treatment.

Recommendation 15. When a case of psoriasis has proved refractory to several therapies (conventional systemic drugs or biologics), IL-17 and IL-23p19 inhibitors should be considered as a safe and effective treatment option.

Recommendation 16. Use other biologic agents rather than TNF- α inhibitors in patients who have demyelinating disease, heart failure, latent tuberculosis infection in the absence of chemoprophylaxis, hepatitis B virus infection, lupus erythematosus or other autoimmune diseases. When considering the use of TNF- α inhibitors in this subpopulation, the patient's cardiac function must first be assessed clinically.

Recommendation 17. When patients achieve remission, physicians should try to optimize the biologic drug regimen (decreasing doses or increasing intervals) with respect to the regimen specified in the Summary of Product Characteristics.

Abbreviations: HRQoL, health-related quality-of-life; IL, interleukin; PUVA, psoralen UVA; TNF, tumor necrosis factor.

Block 1. Quality-of-life Assessment**Recommendation 1. Develop health-related quality-of-life (HRQoL) questionnaires specifically tailored to elderly patients with moderate to severe plaque psoriasis.**

Given that psoriasis affects the HRQoL of older patients physically, socially and emotionally,⁶ treatment should be directed toward improving all those areas.^{7,8} HRQoL should, therefore, be assessed during follow-up. While a number of different tools are currently used to assess HRQoL in

these patients,^{9,10} the one most often used is the Dermatology Life Quality Index (DLQI).¹¹ However, many older patients find it difficult to complete these questionnaires on their own due to vision problems or difficulty understanding the questions. This means that they have to depend on a family member or caregiver to complete the questionnaires, which can limit the usefulness and/or the validity of the tool. Furthermore, some of the items included (for example items relating to sexual activity, work or sports) may not be very relevant and can distort the results.

Recommendation 2. Assess the HRQoL of people living with elderly patients who have moderate to severe plaque psoriasis.

The impact of psoriasis is not limited only to the patient but can also affect family members and people living with the patient, who may play an important role in their care.¹² For this reason, the HRQoL of people living with the patient should also be assessed and the best tool for this purpose is the Family Dermatology Life Quality Index (FDLQI).¹²

Block 2: Supplementary Education

Recommendation 3. Provide patients with supplementary education concerning aspects of the disease specific to older age on a regular basis during follow-up.

The needs of older patients differ from those of younger adults owing to the specific characteristics of the aging process.¹³ It is, therefore, crucial to foster the development of targeted support programs and visual educational materials adapted to this subgroup.

Block 3: Vaccination

Recommendation 4. Consider routine vaccination against herpes zoster (HZ) in elderly patients with moderate to severe plaque psoriasis.

The Spanish Ministry of Health recommends vaccination with the new recombinant and adjuvanted HZ subunit vaccine (HZ/su) for people over 65 years of age, irrespective of underlying diseases or prescribed medication^{14,15} (Table 4) given that the prevalence of HZ infection increases with age.¹⁶ Moreover, autoimmune diseases, such as psoriasis,¹⁶ and certain systemic drugs, for example TNF- α inhibitors, are associated with a higher risk of reactivation.¹⁷⁻²¹

Block 4: Evidence Generation

Recommendation 5. Promote research and studies of real-world clinical practice that include older patients with moderate to severe psoriasis.

Since very little scientific evidence is currently available on the natural course of psoriasis and its associated comorbidities in elderly patients,²² studies are needed of real-world clinical practice that include this older cohort to generate evidence on the natural history of the disease in this subpopulation and on the effectiveness and safety of available treatments.

Block 5: Treatment

Recommendation 6. Prioritize the simplification of treatment regimens when choosing a therapy.

Elderly patients have specific therapeutic needs. Safety and the simplicity of administration should be prioritized when choosing treatment.^{23,24} Treatments with a better safety profile and simpler administration protocols are recommended for these patients.²⁵

Recommendation 7. Long-term single-drug topical therapies should not be considered a first-line treatment

option, especially in elderly patients with physical limitations who have no one to assist them in the application of the treatment.

Topical therapies are associated with fewer AEs and drug interactions than systemic drugs, a significant advantage in polymedicated patients.²⁶ However, the risk of skin atrophy associated with the use of topical steroids is higher in the elderly population.^{7,26} Moreover, long-term adherence to topical therapy tends to be low²⁷ and these treatments may be inappropriate if the patient has physical limitations and no one to assist them in the application of the treatment.²⁶

Recommendation 8. Older patients should generally be prescribed lower doses of conventional systemic treatment than those used in the younger population and clinical and laboratory monitoring should be more frequent.

The use of conventional systemic treatment as a first-line therapy in elderly patients with psoriasis remains a subject of debate. Due to the poor tolerability and organ-specific cumulative toxicity²⁷ of conventional systemic drugs and the risk in older adults of myelosuppression due to immunosenescence,⁷ special care should be taken with these drugs in older patients.¹¹

Recommendation 9. Treatment with methotrexate should be started at low doses (5–7.5 mg) and increased gradually while closely monitoring tolerance, efficacy, and toxicity. Methotrexate is not recommended in patients taking non-steroidal anti-inflammatory drugs, diuretics, isoniazid, or a number of other medications, including penicillins, sulfonamides, antiepileptics, colchicine, dipyridamole, ethanol, sulfonyleureas, and trimethoprim-sulfamethoxazole.

Advanced age is associated with a greater prevalence of comorbid diseases, such as dyslipidemia, diabetes, renal insufficiency, and obesity, all of which increase the risk of toxicity associated with methotrexate.^{21,28} Consequently, it has been suggested that treatment with methotrexate should be started at low doses, with gradual dose escalation if deemed necessary.^{11,26} The Summary of Product Characteristics states that treatment with methotrexate is not recommended if the patient is already receiving any of the drugs listed above.

Recommendation 10. In older patients, acitretin should generally be administered at lower doses than those indicated for younger adults, particularly at the start of treatment.

In elderly patients, acitretin is less effective than other drugs,^{21,29} but it is not an immunosuppressant and therefore it plays a unique role in the strategies used in the management of psoriasis.³⁰ However, clinicians should bear in mind that older adults can be particularly affected by certain AEs, including the following: (1) dryness of the skin and mucosa, which may aggravate the xerosis characteristic of this age group³⁰; (2) hypertriglyceridemia, which increases cardiovascular risk³¹; and (3) acitretin's contraindication for patients with renal or hepatic insufficiency,²¹ diseases that are more prevalent in older patients. While there are

Table 4 Recommended Routine Vaccination for Adults Aged ≥ 65 .

Vaccine	Recommendation
Tetanus and diphtheria vaccination	Verify prior vaccination status before starting or completing a tetanus and diphtheria (Td) vaccination regimen in adults. The health services should be contacted to check the patient's vaccination status and, when required, the patient should be vaccinated with 5 doses of Td. A dose of Td should be administered at around 65 years of age to people who received 5 doses during their childhood and adolescence.
Pneumococcal vaccination	Pneumococcal vaccination is recommended for all adults 65 years or older with a single dose of pneumococcal polysaccharide vaccine with 23 serotypes (PPSV23). ^a
Herpes zoster vaccination	Vaccination with herpes zoster subunit vaccine (HZ/su) is recommended for adults aged 65 years (born in 1958). Two doses should be administered with a minimum interval of 8 weeks. Cohorts between 66 and 80 years of age can then be vaccinated, starting with the population turning 80 years of age. ^b
Annual flu vaccination	From age 65 years onwards, older adults should be vaccinated with one dose of a flu vaccine during each annual campaign.

Source: Spanish Ministry of Health.⁵⁵

^a The new 20-serotype pneumococcal conjugate vaccine (VNC20) is now available and will gradually replace VPN23.

^b Rare cases of adults ≥ 50 years of age with no evidence of immunity to varicella should receive two doses of the vaccine. Clinical studies on the use of the varicella vaccine in adults over 65 years of age do not include a sufficient number of cases to determine whether the immune response achieved in this group is similar to that observed in younger people, although on the rare occasions when a person 50 years of age or older is seronegative for varicella, he or she should, in the absence of contraindications, receive two doses of the vaccine.

no differences in acitretin dosing regimens for older and younger patients, lower doses are more effective in older adults.²¹

Recommendation 11. Treatment with ciclosporin is not recommended for the treatment of moderate to severe psoriasis in elderly patients.

The risk of renal toxicity, serious infections, and cancer increases with age.^{11,25} Older patients are also at increased risk for hypertension and other AEs associated with this drug.^{7,29} As the pharmacokinetics and/or pharmacodynamics of ciclosporin can be affected by certain drugs commonly prescribed to older patients, great caution must be exercised when prescribing ciclosporin in this cohort.²¹

Recommendation 12. As an isolated factor, age should not be considered a limitation when considering biologic therapy for the management of psoriasis.

No age-related variations in treatment efficacy have been observed in moderate to severe psoriasis.^{2,32} Despite this, in clinical practice, fewer biologic drugs are prescribed to elderly patients.²

Recommendation 13. Biologic agents are, on the whole, more effective and better tolerated than conventional systemic treatments.

Spanish Treatment Appraisal Reports^{33–38} have positioned biologic drugs as a second-line treatment for patients with moderate to severe psoriasis for use only when conventional systemic treatments and/or PUVA are contraindicated, not tolerated, or fail to achieve an acceptable response. However, biologic therapy is associated with greater efficacy, a lower probability of organ-specific toxicity, and greater convenience in terms of administration than conventional systemic agents.^{7,21,25,39}

Few AEs associated with biologic therapies have been reported in the geriatric population.^{1,29,32,40–42} Owing to their greater safety and tolerability,^{21,27,39,40,44} biologic agents are a more appropriate long-term treatment than conventional systemic treatments in this population.⁴³

In any event, elderly patients should always be closely monitored because of the increased risk of infection⁷ and because severe AEs tend to be more common in this cohort, irrespective of the type of treatment prescribed.² However, biologic agents are a safe and effective option when appropriate prophylactic measures are taken.

Recommendation 14. Due to the convenience of their dosing regimens, drugs targeting interleukin (IL)-12/23p40 and IL-23p19 are a good option in both first and subsequent lines of treatment.

In patients of advanced age with moderate to severe psoriasis, IL-23 inhibitors are a safe and effective option³² which also improves HRQoL.^{21,2,43–48} Furthermore, it is likely that the risk of infection is lower with IL-12/23p40 and IL-23p19 inhibitors than with first generation biologic agents and conventional systemic drugs.⁷ They also have the added advantage of more convenient administration protocols.

Recommendation 15. When a case of psoriasis has proved refractory to several therapies (conventional systemic drugs or biologics), IL-17 and IL-23p19 inhibitors should be considered as a safe and effective treatment option.

IL-17 inhibitors have been shown to be safe and effective in elderly patients.²⁵ The main AEs reported in older patients on these drugs do not seem to differ from those reported in younger cohorts despite the higher prevalence of comorbidities in the elderly population.⁴⁵ Oral candidiasis

is the only AE associated with the use of IL-17 inhibitors that could have a higher incidence in this subgroup.²⁷

Recommendation 16. *Use other biologic agents rather than TNF- α inhibitors in patients who have demyelinating disease, heart failure (HF), latent tuberculosis infection (LTBI) in the absence of chemoprophylaxis, hepatitis B virus (HBV) infection, lupus erythematosus or other autoimmune diseases. When considering the use of TNF- α inhibitors in this subpopulation, the patient's cardiac function must first be assessed clinically.*

Caution must be exercised when considering the prescription of TNF- α inhibitors in patients with chronic infections and carriers^{27,49} of HBV or LTBI, and also in patients with a history of HZ. Treatment with TNF inhibitors is associated with a small, but significant, increase in the risk of reactivation of the varicella zoster virus,²¹ especially in patients with weakened immune systems.

They should also be used with caution in patients who have lupus erythematosus or other autoimmune diseases^{27,49,50} and in patients with grade I-II NYHA HF.⁷ Finally, moderate to severe HF (NYHA III-IV) and the presence of demyelinating disease are absolute contraindications to their use.

Recommendation 17. *When patients achieve remission, physicians should try to optimize the biologic drug regimen (decreasing doses or increasing intervals) with respect to the regimen specified in the Summary of Product Characteristics.*

The current guidelines of the Psoriasis Group recommend prioritizing safety and consider optimization strategies to be appropriate in patients who achieve remission.⁵⁰

Discussion

This document, authored by the AEDV Psoriasis Group, offers a series of practical recommendations for the management of moderate to severe plaque psoriasis in elderly patients. The initial list of recommendations was based on a review of the literature. These were submitted to a panel of experts, who reached consensus on the final proposal using the Delphi method.

The aim of these recommendations is to support decision-making by physicians and other professionals involved in the care process (pharmacists and/or managers), with the ultimate aim of improving health outcomes in elderly patients who have moderate to severe plaque psoriasis. The expert panel highlighted the importance of the following in this cohort: (1) evaluating the HRQoL of both patients and family members; (2) strengthening support measures and offering assistance with treatment; (3) simplifying the treatment regimen; and (4) considering biologic therapy, which has been shown to be a safer and more effective option than conventional systemic therapies.

Consensus was not reached on some of the statements considered in the Delphi study. Although there is evidence to support the efficacy and safety of phototherapy in elderly patients,^{21,51} consensus was not reached on its use as a first-line treatment in this setting. Similarly, although

there is evidence supporting the efficacy and tolerability of treatment with dimethyl fumarate in these patients,⁵² the complexity of the dosage regimen, the elevated incidence of gastrointestinal AEs, and the need for periodic analytical monitoring⁵³ make it difficult to consider this drug an ideal option in older patients. Finally, while the safety profile of apremilast may appear interesting in this age cohort,³² the complex initial dosing regimen, the high frequency of gastrointestinal AEs, and its relatively lower efficacy compared to biologic therapy⁵⁴ limits its prioritization over other alternatives.

The present study has some limitations inherent in the methodology used, which bases consensus on the experience of an expert panel. The recommendations are based on the methodological procedure described, and their application should be contextualized within the Spanish healthcare system.

Conclusions

This consensus exercise allowed us to define specific recommendations for managing moderate to severe plaque psoriasis in elderly patients. These recommendations will enable prescribing dermatologists to take decisions with greater confidence and will raise awareness about the available scientific evidence among other actors involved in the care of these patients.

Funding

The project was conceived and funded by the Spanish Academy of Dermatology and Venereology with an unlimited grant from Almirall. No person connected with Almirall has participated in the development of the proposed recommendations or in drafting this manuscript.

Acknowledgments

The authors would like to thank the members of the AEDV Psoriasis Group for their contributions to the document and Outcomes'10 for their methodological support and coordination of the project.

References

1. Medina C, Carretero G, Ferrandiz C, Dauden E, Vanaclocha F, Gómez-García FJ, et al. Safety of classic and biologic systemic therapies for the treatment of psoriasis in elderly: an observational study from national BIOBADADERM registry. *J Eur Acad Dermatol Venereol.* 2015;29:858–64.
2. Sandhu VK, Ighani A, Fleming P, Lynde CW. Biologic treatment in elderly patients with psoriasis: a systematic review. *J Cutan Med Surg.* 2020;24:174–86.
3. Garcia-Doval I, Carretero G, Vanaclocha F, Ferrandiz C, Dauden E, Sanchez-Carazo JL, et al. Risk of serious adverse events associated with biologic and nonbiologic psoriasis systemic therapy: patients ineligible vs eligible for randomized controlled trials. *Arch Dermatol.* 2012;148:463–70.
4. Hazeldine J, Lord JM. Innate immunosenescence: underlying mechanisms and clinical relevance. *Biogerontology.* 2015;16:187–201.

5. Köller MD, Aletaha D, Funovits J, Pangan A, Baker D, Smolen JS. Response of elderly patients with rheumatoid arthritis to methotrexate or TNF inhibitors compared with younger patients. *Rheumatology (Oxford)*. 2009;48:1575–80.
6. Yosipovitch G, Tang MB. Practical management of psoriasis in the elderly: epidemiology, clinical aspects, quality of life, patient education and treatment options. *Drugs Aging*. 2002;19:847–63.
7. Shary N, Kalb RE. Optimizing the treatment of moderate-to-severe psoriasis in older adults. *Drugs Aging*. 2020;37:715–23.
8. Balato N, Patruno C, Napolitano M, Patri A, Ayala F, Scarpa R. Managing moderate-to-severe psoriasis in the elderly. *Drugs Aging*. 2014;31:233–8.
9. Calidad de Vida y Psoriasis; 2016. Available from: <https://aedv.es/wp-content/uploads/2016/07/Calidad-de-vida-y-psoriasis.pdf> [cited 16.11.21].
10. Lizán L, Gabás-Rivera C, Belinchón I, Dilla T, Huete T, Díaz S. Instrumentos para la valoración de los resultados percibidos por el paciente con psoriasis en España: revisión sistemática de la literatura. *Actas Dermosifiliogr*. 2019;110:561–84.
11. Nast A, Smith C, Spuls PI, Avila Valle G, Bata-Csorgo Z, Boonen H, et al. EuroGuiDerm Guideline on the systemic treatment of psoriasis vulgaris – Part 1: Treatment and monitoring recommendations. *J Eur Acad Dermatol Venereol*. 2020;34:2461–98.
12. Basra MK, Sue-Ho R, Finlay AY. The Family Dermatology Life Quality Index: measuring the secondary impact of skin disease. *Br J Dermatol*. 2007;156:528–38.
13. Modig S, Kristensson J, Troein M, Brorsson A, Midlov P. Frail elderly patients' experiences of information on medication. A qualitative study. *BMC Geriatr*. 2012;12:46.
14. Grupo de trabajo de vacunación frente a herpes zóster de la Ponencia de Programa y Registro de Vacunaciones. Comisión de Salud Pública del Consejo Interterritorial del Sistema Nacional de Salud. Ministerio de Sanidad; Mar 2021 [07/2022]. Available from: https://www.sanidad.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/programasDeVacunacion/docs/HerpesZoster_RecomendacionesVacunacion.pdf [cited 17.11.21].
15. Kim BS, Maverakis E, Alexanian C, Wang JZ, Raychaudhuri SP. Incidence, clinical features management, and prevention of herpes zoster in patients receiving antitumor necrosis factor therapy: a clinical review. *J Cutan Med Surg*. 2020;24:278–84.
16. Yun H, Yang S, Chen L, Xie F, Winthrop K, Baddley JW, et al. Risk of Herpes Zoster in autoimmune and inflammatory diseases: implications for vaccination. *Arthritis Rheumatol*. 2016;68:2328–37.
17. Galloway JB, Mercer LK, Moseley A, Dixon WG, Ustianowski AP, Helbert M, et al. Risk of skin and soft tissue infections (including shingles) in patients exposed to anti-tumour necrosis factor therapy: results from the British Society for Rheumatology Biologics Register. *Ann Rheum Dis*. 2013;72:229–34.
18. Strangfeld A, Listing J, Herzer P, Liebhaber A, Rockwitz K, Richter C, et al. Risk of herpes zoster in patients with rheumatoid arthritis treated with anti-TNF-alpha agents. *JAMA*. 2009;301:737–44.
19. Failla V, Jacques J, Castronovo C, Nikkels AF. Herpes zoster in patients treated with biologicals. *Dermatology*. 2012;224:251–6.
20. Che H, Lukas C, Morel J, Combe B. Risk of herpes/herpes zoster during anti-tumor necrosis factor therapy in patients with rheumatoid arthritis. Systematic review and meta-analysis. *Joint Bone Spine*. 2014;81:215–21.
21. Di Lernia V, Goldust M. An overview of the efficacy and safety of systemic treatments for psoriasis in the elderly. *Expert Opin Biol Ther*. 2018;18:897–903.
22. Menter A, Korman NJ, Elmets CA, Feldman SR, Gelfand JM, Gordon KB, et al. Guidelines of care for the management of psoriasis and psoriatic arthritis: Section 6. Guidelines of care for the treatment of psoriasis and psoriatic arthritis: case-based presentations and evidence-based conclusions. *J Am Acad Dermatol*. 2011;65:137–74.
23. Maul JT, Navarini AA, Sommer R, Anzengruber F, Sorbe C, Mrowietz U, et al. Gender and age significantly determine patient needs and treatment goals in psoriasis – a lesson for practice. *J Eur Acad Dermatol Venereol*. 2019;33:700–8.
24. van Winden MEC, ter Haar ELM, Groenewoud JMM, van de Kerkhof PCM, de Jong EMGJ, Lubeek SFK. Quality of life, treatment goals, preferences and satisfaction in older adults with psoriasis: a patient survey comparing age groups. *Br J Dermatol*. 2021;184:759–62.
25. Hayashi M, Umezawa Y, Fukuchi O, Ito T, Saeki H, Nakagawa H. Efficacy and safety of ustekinumab treatment in elderly patients with psoriasis. *J Dermatol*. 2014;41:974–80.
26. Natsis NE, Merola JF, Weinberg JM, Wu JJ, Orbai AM, Bagel J, et al. Treatment of Medicare patients with moderate-to-severe psoriasis who cannot afford biologics or apremilast. *Am J Clin Dermatol*. 2020;21:109–17.
27. Gisondi P, del Giglio M, Girolomoni G. Treatment approaches to moderate to severe psoriasis. *Int J Mol Sci*. 2017;18:2427.
28. Otero A, de Francisco A, Gayoso P, García F. Prevalence of chronic renal disease in Spain: results of the EPIRCE study. *Nefrología*. 2010;30:78–86.
29. Piaserico S, Conti A, lo Console F, de Simone C, Prestinari F, Mazzotta A, et al. Efficacy and safety of systemic treatments for psoriasis in elderly patients. *Acta Derm Venereol*. 2014;94:293–7.
30. Carretero G, Ribera M, Belinchón I, Carrascosa JM, Puig L, Ferrandiz C, et al. Guidelines for the use of acitretin in psoriasis. Psoriasis Group of the Spanish Academy of Dermatology and Venereology. *Actas Dermosifiliogr*. 2013;104:598–616.
31. Wong JW, Koo JY. The safety of systemic treatments that can be used for geriatric psoriasis patients: a review. *Dermatol Res Pract*. 2012;2012:367475.
32. Megna M, Camela E, Battista T, Genco L, Martora F, Noto M, et al. Efficacy and safety of biologics and small molecules for psoriasis in pediatric and geriatric populations. Part II: Focus on elderly patients. *Expert Opin Drug Saf*. 2023;22:43–58.
33. Informe de Posicionamiento terapéutico (IPT) de brodalumab [09/2021]. Available from: <https://www.aemps.gob.es/medicamentosUsoHumano/informesPublicos/docs/IPT-brodalumab-Kyntheum-psoriasis.pdf> [cited 22.9.21].
34. Informe de Posicionamiento terapéutico (IPT) de guselkumab [09/2021]. Available from: <https://www.aemps.gob.es/medicamentosUsoHumano/informesPublicos/docs/IPT-guselkumab-Tremfya-psoriasis.pdf> [cited 22.9.21].
35. Informe de Posicionamiento terapéutico (IPT) de ixekizumab [09/2021]. Available from: <https://www.aemps.gob.es/medicamentosUsoHumano/informesPublicos/docs/IPT-ixekizumab-Taltz-psoriasis.pdf> [cited 22.9.21].
36. Informe de Posicionamiento terapéutico (IPT) de risankizumab [09/2021]. Available from: https://www.aemps.gob.es/medicamentosUsoHumano/informesPublicos/docs/IPT_7-2020-risankizumab-Skyrizi.pdf [cited 22.9.21].
37. Informe de Posicionamiento terapéutico (IPT) de secukinumab [09/2021]. Available from: <https://www.aemps.gob.es/medicamentosUsoHumano/informesPublicos/docs/IPT-secukinumab-Cosentyx.pdf> [cited 22.9.21].
38. Informe de Posicionamiento terapéutico (IPT) de tildrakizumab [09/2021]. Available from: <https://www.aemps.gob.es/medicamentosUsoHumano/informesPublicos/docs/IPT-tildrakizumab-Ilumetri-psoriasis-placas.pdf> [cited 22.9.21].
39. Van Winden MEC, van der Schoot LS, van de L'Isle Arias M, van Vugt LJ, van den Reek J, van de Kerkhof PCM, et al. Effectiveness and safety of systemic therapy for psoriasis in older adults: a systematic review. *JAMA Dermatol*. 2020;156:1229–39.

40. Garber C, Plotnikova N, Au SC, Sorensen EP, Gottlieb A. Biologic and conventional systemic therapies show similar safety and efficacy in elderly and adult patients with moderate to severe psoriasis. *J Drugs Dermatol*. 2015;14:846–52.
41. Ter Haar ELM, Bronkhorst EE, Borgonjen RJ, Kleinpenning MM, Kop EN, Visch MB, et al. GERiatric Psoriasis PATterns (GEPPA): a multicentre retrospective cohort study on disease and treatment patterns in older adults with psoriasis. In: 30TH EADV Congress. 2021.
42. Ricceri F, Bardazzi F, Chiricozzi A, Dapavo P, Ferrara F, Mugheddu C, et al. Elderly psoriatic patients under biological therapies: an Italian experience. *J Eur Acad Dermatol Venereol*. 2019;33:143–6.
43. Megna M, Camela E, Cinelli E, Fabbrocini G. Real-life efficacy and safety of secukinumab in elderly patients with psoriasis over a 2-year period. *Clin Exp Dermatol*. 2020;45:848–52.
44. Bakirtzi K, Sotiriou E, Papadimitriou I, Sideris N, Vakirlis E, Lallas A, et al. Elderly patients with psoriasis: long-term efficacy and safety of modern treatments. *J Dermatolog Treat*. 2022;33:1339–42.
45. Phan C, Beneton N, Delaunay J, Reguiai Z, Boulard C, Fougousse AC, et al. Effectiveness and safety of anti-interleukin-17 therapies in elderly patients with psoriasis. *Acta Derm Venereol*. 2020;100:adv00316.
46. Körber A, Papavassilis C, Bhoosekar V, Reinhardt M. Efficacy and safety of secukinumab in elderly subjects with moderate to severe plaque psoriasis: a pooled analysis of phase III studies. *Drugs Aging*. 2018;35:135–44.
47. Megna M, Cinelli E, Balato A, Gallo L, Fabbrocini G. Efficacy and safety of ixekizumab in a group of 16 elderly patients with psoriasis over a 1-year period. *J Eur Acad Dermatol Venereol*. 2020;34:e152–3.
48. Ustekinumab Summary of Product Characteristics [09/2021]. Available from: https://cima.aemps.es/cima/pdfs/ft/108494004/FT_108494004.pdf [cited 22.9.21].
49. Semble AL, Davis SA, Feldman SR. Safety and tolerability of tumor necrosis factor- α inhibitors in psoriasis: a narrative review. *Am J Clin Dermatol*. 2014;15:37–43.
50. López-Esteban JL, de la Cueva-Dobao P, de la Torre Fraga C, Galán Gutiérrez M, González Guerra E, Mollet Sánchez J, et al. Management of moderate to severe psoriasis in routine clinical practice in Spanish hospitals. *Actas Dermosifiliogr (Engl Ed)*. 2018;109:631–42.
51. Campbell J. Safe and effective use of phototherapy and photochemotherapy in the treatment of psoriasis. *Br J Nurs*. 2020;29:547–52.
52. Ricceri F, Bardazzi F, Buggiani G, Burlando M, Campione E, Corazza M, et al. Efficacy and safety of dimethylfumarate in elderly psoriasis patients: a multicentric Italian study. *J Dermatolog Treat*. 2022;33:2000–3.
53. Dimetilfumarato FT. Available from: https://cima.aemps.es/cima/pdfs/es/ft/113837001/FT_113837001.pdf [cited 22.9.21].
54. Apremilast FT. Available from: https://www.ema.europa.eu/en/documents/product-information/otezla-epar-product-information_es.pdf [cited 22.9.21].
55. Ministerio de Sanidad, consumo y bienestar social. Vacunación en población adulta. Available from: https://www.sanidad.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/programasDeVacunacion/docs/Vacunacion_poblacion_adulta.pdf [cited 22.9.21].