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Review

Psoriasis in Latin America

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Abstract

During the last few decades, management of psoriasis has changed worldwide, owing to a better understanding of its pathophysiology and the introduction of new treatments. As experts in the field of dermatology, specialists from Latin America collaborated to develop this review and further provide an update on the current state of psoriasis management in Latin America. With the goal of summarizing the latest information on psoriasis in most countries in Latin America, we conducted a literature search to obtain relevant articles published in the medical/scientific literature in Latin American countries over the last 10 years; in addition, we completed a questionnaire comprised of 20 questions on important issues related to psoriasis. The aim of this final document is

to help improve understanding and management of the disease and to help patients gain better access to new approaches and medical solutions.

Keywords: Psoriasis, epidemiology, adherence, survival, treatment, Latin America

Introduction

In the last 20 years, the pathophysiological concept of psoriasis has evolved dramatically and awareness of the comorbidities that accompany the disease has sparked new interest in its pathology, leading to changes in the management and treatment of patients with this disease. With new treatments currently emerging and new therapeutic options expected in the near future, updating information on disease management, treatment access, and options for psoriasis patients globally is essential. To that end, as experts in dermatology from different countries in Latin America with extensive experience in psoriasis, we collaborated to examine current management of this disease in this region and developed this review.

For this review, an extensive literature search was conducted to identify original publications and investigations specifically from Latin America, with the goal of evaluating the contributions of professionals from the region to the medical literature, including original articles, consensus statements, or guidelines on the assessment and treatment of patients with psoriasis. In addition, we developed and completed a 20-item questionnaire that provides up-to-date information on the most salient aspects of psoriasis management in their respective countries, including Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela.

Methods

Literature review

To collect as much information as possible from the medical/scientific literature on psoriasis published in Latin America a thorough search was conducted of articles published in the last 10 years in dermatology journals. The following journals available online and in local medical libraries (i.e., non-indexed journals) and published from 2005 to 2014 were searched. These included: Archivos Argentinos de Dermatología, Anais Brasileiros de Dermatologia, Dermatología Argentina, Dermatología Ecuatoriana, Dermatología Peruana, Dermatología Revista Mexicana, Dermatología Venezolana, Folia Dermatológica Peruana, Medicina Cutánea, Piel, Revista de la Asociación Argentina de Dermatología, Revista Chilena de Dermatología, Revista de la Asociación Colombiana de Dermatología, Revista de la Sociedad Boliviana de Dermatología, Revista Dominicana de Dermatología, and Surgical and Cosmetic Dermatology. In addition, searches were conducted for psoriasis-related articles written by Latin American authors and published in international journals using PubMed, MEDLINE, EMBASE, and SciELO databases.

A total of 85 articles about psoriasis in Latin America from Latin American authors were identified [1-85]. Journals with the greatest number of articles were Anais Brasileiros de Dermatologia (24), Revista de la Asociación Colombiana de Dermatologia (11), Dermatología Argentina (9), and Dermatología Peruana (8). The most common types of articles found were case studies, reviews, and clinical commentaries.

Psoriasis management questionnaire

In 2014, we developed and responded to a series of 20 questions (Table 1) to collect valuable data on the management of psoriasis in our respective countries. The content of this questionnaire may be expanded in the

future and additional dermatologists, including dermatologists from other countries, may be included in the survey.

Table 1. Author questionnaire on psoriasis management in Latin America.

No.	Question
1	How many specialists in dermatology are practicing in your country?
2	How many of these dermatologists see patients with psoriasis?
3	How are these specialists trained?
4	Do dermatologists in your country have continuing medical education activities?
5	Are scientific activities available that are related to psoriasis management?
6	Are community-targeted education campaigns or activities conducted for patients and/or their families?
7	Are psoriasis associations available for patients?
8	What type of health care system exists in your country? (public, private, total/partial medical insurance)
9	What type of coverage is available for psoriasis treatments? <ul style="list-style-type: none"> • Topical • Systemic • Biologic • Small molecules
10	Do all patients have access to biologic treatment? If not, how many patients have access to biologic treatment?
11	Are epidemiological data available in your country on the incidence of psoriasis and psoriatic arthritis?
12	Do psoriasis patient registries exist in your country?
13	Have national guidelines/consensus statements been developed on psoriasis treatment? If not, what treatment algorithms are used?
14	Which treatments are available in your country?
	Topical treatments
	Treatment Available Infrequent Use Extensive Use
	Corticosteroids
	Pimecrolimus
	Tacrolimus
	Coal tar
	Vitamin D analogs
	Retinoids

Systemic treatments

Methotrexate
Cyclosporine
Acitretin
Antibiotics

Phototherapy

Heliotherapy

UVB

Narrow band

UVB

PUVA

Biologics

Adalimumab
(Humira)

Certolizumab
(Cimzia)

Etanercept
(Enbrel)

Golimumab
(Simponi)

Infliximab
(Remicade)

Ustekinumab
(Stelara)

Biosimilars

- 15 Do you use any medications concomitantly with biologic therapy?
Topicals (specify)
Systemic (specify)
- 16 What degree of adherence to biologic treatment do you observe among psoriasis patients in your country?
- 17 What is the approximate survival time for biologic treatment (months)?
- 18 Do psoriasis patients use alternative therapies? If so, which ones?
- 19 Do patients use homeopathic therapies?
- 20 Are dermatologists in your country knowledgeable about new psoriasis treatments?
-

The questionnaire focused on the following topics: the numbers of specialists in dermatology in each country and the number of dermatologists seeing patients with psoriasis; specialist training, continuing medical education activities, and scientific meetings on psoriasis for dermatologists; community-targeted education campaigns and

psoriasis-related activities/associations for patients and families; types of health care systems, treatment coverage, particularly related to psoriasis treatment, and patient access to biologic therapies; incidence of psoriasis and psoriatic arthritis; patient registries; national guidelines/consensus statements on psoriasis treatment; available treatments, i.e., topicals, systemic treatment, phototherapy and biologics, and use of concomitant treatments with biologics; adherence to biologic therapy and estimated survival of biologic therapy; local approaches to psoriasis treatment, e.g., alternative treatments and homeopathy; and dermatologists' knowledge of new treatments for psoriasis.

Results

Dermatologists and patients

An up-to-date overview of psoriasis management in our countries of origin was derived from the literature searches and responses to the questionnaire. This may in part also reflect disease management elsewhere in Latin America. Psoriasis was found to be primarily treated by dermatologists. The numbers of dermatologists varied widely by country, from 350 specialists recognized by the Chilean Society of Dermatology (SOCHIDERM), to an estimated 7,500 specialists in Brazil (Table 2).

Table 2. Range of dermatological services

Country	Estimated population (2015) [868686]	No. of dermatologists	Ratio of dermatologists:inhabitants	Ratio of psoriasis specialists:inhabitants
Argentina	43,000,000	3000	1/14,300	1/140,000
Mexico	121,000,000	2000	1/60,000	1/600,000
Brazil	204,000,000	7500	1/30,000	1/300,000
Colombia	48,000,000	567	1/80,000	1/800,000
Venezuela	31,000,000	500	1/63,000	1/630,000
Chile	18,000,000	350	1/51,000	1/510,000

Approximately 2,000 dermatologists are practicing in Mexico, a relatively low number given the country's total population. No official psoriasis subspecialty among dermatologists was reported, but an estimated 5% to 10% of dermatologists were found to specialize in the care of patients with psoriasis (Table 3). However, depending on the country, there are between 50% and 100% of dermatologists who provide care for patients with this disorder. In local medical societies, working groups of professionals with the most experience in psoriasis management were assembled to develop consensus statements/treatment guidelines.

Table 3. Psoriatic patients and dermatologists

Country	Estimated psoriatic population (2015, ~2%) [8787888788],88]	Moderate/severe psoriatic patients, 25%-30%) [8787888788],88]	Dermatologists with focus in psoriasis	Ratio of dermatologists:psoriatic patients
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Argentina	860,000	215,000	300	1/ 2900
Mexico	2,420,000	605,000	200	1/12,000
Brazil	4,080,000	1,000,000	600/700	1/6300
Colombia	960,000	240,000	57	1/17,000
Venezuela	630,000	157,000	50	1/12,600
Chile	360,000	90,000	35	1/10,000

In all countries, educational training is similar, involving activities, courses, and symposia offered at national, regional, and local medical society congresses and meetings of other relevant health/professional institutions/associations (e.g., SOLAPSO [Latin American Society of Psoriasis]). Additionally, specialized journals and journal supplements, and continuing medical education modules are available online or in person. For example, in the past year, many scientific activities on psoriasis in different countries were organized, including symposia and events organized by pharmaceutical companies, programs held at national conferences, courses offered by national societies, and educational campaigns on psoriasis, such as that held in Brazil by 75 Dermatology Departments by members of the Brazilian Society of Dermatology (SBD).

An increasing number of community activities are available to patients and families to raise awareness and educate them about the disease. These events are organized by patient associations, medical societies, government and non-governmental groups, and pharmaceutical companies. For example, in Mexico, psoriasis detection campaigns sponsored by the Mexican Foundation for Dermatology are held monthly in different states. In addition, various meetings are scheduled during World Psoriasis Day in October each year in countries including Argentina, Brazil, and Chile. A “Psoriasis Month” is organized in Venezuela by their Society of Medical Surgical and Cosmetic Dermatology. In Brazil, during the SBD National Campaign for Psoriasis, which takes place annually, educational lectures for the general population are organized and informational materials distributed. In Chile, SOCHIDERM (Sociedad Chilena de Dermatología y Estética) coordinates activities with working groups, universities, and hospitals. Many of these activities are carried out in conjunction with patient organizations, which exist in all countries, including AEPPO (Asociación Civil para el Enfermo de Psoriasis) in Argentina, FUNDAPSO (Fundación de Apoyo al Paciente con Psoriasis) in Colombia, and CORPSO (Corporación de Psoriasis de Chile) in Chile.

Health care systems and treatment coverage

To examine how patients with psoriasis are treated in Latin America, our research also focused on health care systems, treatment coverages, and patient access to treatment for psoriasis in each country. Although substantial differences are found between countries in terms of the agencies and administrative mechanisms involved, all countries generally have public and private health systems. In Argentina, the health system consists of three types of coverage that overlap in most cases. Firstly, health is protected by the national constitution and guaranteed for the entire population, with coverage provided by the provincial states and possibly also municipal institutions; secondly, all workers as employees, professionals, and self-employed have social health coverage funded in part by employees and partly by employers; and thirdly, individuals with higher incomes may also have private health insurance. A national health coverage system called PAMI (Programa de Atención Médica Integral) is available for retirees and some retiree health coverage may also be available through provincial bodies. In Argentina, 40% of the official cost of topical and systemic treatments is covered; coverage for biologics depends on the health plan and must be approved by the respective auditors; and the social security system covers 90% to 100% of the cost of the drug, although in some cases, court action may be needed to ensure the provision.

Brazil has a public health system (primarily intended for individuals with low income) and also private health insurance system. Topical treatments such as calcipotriol and clobetasol are covered under the public health system, which generally covers 100% of systemic treatments. However, biologics are generally not covered by the public system in most states, except for psoriatic arthritis, which is covered 100%. In the state of Sao Paulo, biologics are covered if an administrative process is followed. In contrast, the private system covers some treatments depending on the type of health insurance.

Chile has a public health system, FONASA (Fondo Nacional de Salud), which covers 80% of the population (i.e., those with lower incomes), and a private system that covers 20% of the population (i.e., those with higher incomes). The private system is subdivided into multiple private insurers or ISAPREs (Instituciones de Salud Provisional). In recent years, other private insurers have entered the market covering its policyholders for pharmacologic treatments and hospitalization costs. With regard to psoriasis treatments, FONASA covers systemic but not biologic therapy, whereas ISAPREs are only required to cover hospital intravenous therapies and some subcutaneous therapies according to the contracted plan.

In Colombia, a system of semi-private and private insurance covers 100% of systemic and biologics treatments; however, coverage for these high cost treatments must be approved through a special process after patients fail to achieve an adequate response to initial treatments of betamethasone or methotrexate, for example.

In Mexico, government agencies such as IMSS (Instituto Mexicano del Seguro Social), ISSSTE (Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado), and the Ministry of Health cover 100% of the cost of topical, systemic, and biologic treatments for psoriasis. In Mexico, 5% of the population has private insurance and 40% has social security coverage; thus 45% of the population has medical service at their disposal.

Venezuela has a health care system at public and private levels. A high percentage of the population has private insurance that reimburses expenses to patients. The State, through the Office of Expensive Drugs, distributes biologics free to patients with moderate-to-severe psoriasis resistant to systemic treatments.

Patient access to biologics

In addition to health coverage, information regarding the proportions of psoriasis patients with access to biologic treatments was also solicited in the questionnaire. Product approval for treatment of psoriasis does not mean that the product is available to all patients with the disease. Access to medication is not equal for all individuals, which is particularly true in regions such as Latin America, where striking inequalities are still evident among inhabitants. In Argentina, where 40% of the population has no health care coverage, the national or provincial state must provide the prescribed treatment, although the process is often very complicated and slow. Some patient programs, organized by pharmaceutical companies that distribute biologics, facilitate the latter procedure. In Brazil, access depends on each state, as biologics are not covered for psoriasis by the public system (except in patients with psoriatic arthritis). Patients must navigate an administrative process that is well established only in the State of Sao Paulo, although in the private system some medical contracts cover biologics. In Chile, approximately 20% of patients who have an ISAPRE with copayments are covered for biologics. Most patients in Colombia receive biologic treatment if they complete an order form and obtain the necessary approval. In Mexico, 40% of patients have access to biologics. Finally, in Venezuela, biologic therapy is covered if it is well justified and supported.

Epidemiology

Several questions arose from our investigation regarding the epidemiology of psoriasis in Latin America, such as: How many patients in this region have psoriasis? Are estimates available on the incidence and prevalence of

psoriasis and/or psoriatic arthritis? Are data or records available? However, local epidemiological data appears to be scarce, incomplete, unknown, or outdated. In general, in most Latin American countries, no data or sources of relevant information currently exist. Extrapolation based on findings from other countries suggests a prevalence of psoriasis of approximately 2%, with psoriatic arthritis affecting 25% to 30% of these individuals (Table 3). The SBD in Brazil is finalizing an epidemiologic study on this subject. The lack of epidemiological data can be explained by the traditionally poor collection of long-term records in Latin America, where only limited amounts of data are available for limited periods. In most countries, no patient registries have been created; moreover, only a few international initiatives have been launched, such as RELAPSO (Registro Latinoamericano de Psoriasis) and PSOLAR (Psoriasis Longitudinal Assessment and Registry), or data have been recorded in rheumatology only, related to biologic treatment of psoriatic arthritis. RELAPSO is a Latin American registry, coordinated by SOLAPSO, presently closed for data analysis and which has not yet been reactivated.

Treatment guidelines

Although large-scale epidemiological studies have not been performed to date, consensus statements and management guidelines have been developed in all countries to provide guidance to clinicians on how to approach patients with psoriasis. These documents are recently developed and evidence-based; some have been designed according to other widely accepted international publications, published in local media, updated, and prepared and endorsed by experts in the field, with or without the support of each country's dermatology society.

In these documents, the goal is to provide the reader, who may be a specialist or general practitioner who treats patients with psoriasis in regions isolated from other access to health resources, with the diagnostic and treatment tools required for proper management of the disease. Some of the documents are very detailed, including information from the literature as the latest evidence without consideration of the fact that new treatments may not be used by all patients, possibly due to lack of availability or limited access.

Psoriasis treatment

Information collected on available treatments and their use according to the various countries' standard medical practices focused on topical, systemic, phototherapy, and biologic treatments. Topicals included corticosteroids, pimecrolimus, tacrolimus, coal tars, vitamin D analogs, and retinoids. These were all available in the countries under consideration, except pimecrolimus in Colombia and retinoids in Brazil, Venezuela, and Chile. In Argentina and Brazil, the most commonly used topicals are corticosteroids. In Colombia and Mexico, the most frequently used are corticosteroids, vitamin D analogs, and retinoids. Corticosteroids and coal tars are used in Chile, whilst in Venezuela, all previously mentioned topicals are routinely used, except retinoids.

Systemic treatments under consideration were methotrexate, cyclosporine, acitretin, mycophenolate mofetil, hydroxyurea, and systemic corticosteroids. All of these medications are available in all countries, except hydroxyurea, which is not used in Colombia, Brazil, Venezuela, or Mexico. In most countries, the most commonly used systemic therapies are methotrexate, cyclosporine, and acitretin. In Chile, methotrexate is the most commonly used.

The various phototherapy options - heliotherapy, UVB, narrow-band UVB, and PUVA, are available in the main cities of all the countries and are generally used commonly. In Chile and Mexico, narrow-band UVB and PUVA are more frequently administered than the other phototherapies.

The currently approved biologic agents adalimumab, etanercept, and infliximab are available in all countries; ustekinumab is available in most countries; and certolizumab and golimumab are available in a few countries (Table 4). The frequency of use varies among countries. For example, adalimumab, etanercept, infliximab, and

ustekinumab are more commonly used in Brazil and Mexico; adalimumab, etanercept, and ustekinumab in Argentina and Colombia; infliximab and etanercept in Chile; and adalimumab in Venezuela. Moreover, although these biologic agents are available, they have not yet gained widespread acceptance and use.

Table 4. Availability and frequency of use of biologics in patients with psoriasis in Latin America

Biologic	Argentina	Brazil	Chile	Colombia	Mexico	Venezuela
Adalimumab	++++	++++	+	+++	++++	++++
Certolizumab	No	+	No	No	No	No
Etanercept	++++	++++	++	+++	++++	++++
Infliximab	+ / ++	++++	+++	++	++++	++
Golimumab	No	+	+	No	No	No
Ustekinumab	++	++++	+	+++	++	No

Biologic use ratings: rarely used (+), infrequently used (++), frequently used (+++), very frequently used (++++).

Information about concomitant treatments taken with biologics was also collected. Among concomitant topical treatments, most dermatologists indicated that corticosteroids with biologics are administered, some also adding vitamin D analogs. Methotrexate is frequently added to the biologic regimen, whereas phototherapy, acitretin, and cyclosporine are less commonly used as concomitant therapy with biologics.

Biologic adherence and survival

Patients in different countries have demonstrated a high degree of adherence to biologic treatment when biologics are available and patients have access to them. The efficacy of these agents does not decline, and adverse effects, if present, generally do not lead to discontinuation of therapy. In Chile, where the ISAPREs cover biologic treatment for only 6 months in some cases, patients must abbreviate treatments or appeal to maintain the benefit every 6 months. For patients who are allowed to use biologics without such restrictions compliance generally begins to decrease after 1 year of treatment, and longer intervals between doses or skipped doses are more commonly seen.

In responding to the question of how long patients continue on biologic therapy, i.e., survival rates, this is influenced by several factors, including efficacy, safety and tolerability, experts' opinions varied considerably (Table 5).

Table 5. Drug survival

Country	Estimated drug survival
Argentina	~2 years
Mexico	2–4 years
Brazil	>2 years
Colombia	>2 years
Venezuela	≥1 years
Chile	2–3 years

Local alternative therapies

Research was conducted on local alternative therapies, based on local customs, habits, and traditions of the societies of Latin America. Homeopathy, shamans, exotic diets, psychotherapy, and many other alternatives are considered as management options, with widely varying opinions in the absence of official data. Other approaches such as iridology, reflexology, magnets, acupuncture, Reiki, and Bach flowers are all used in a casual manner, with very mixed results, particularly in patients with low socioeconomic and cultural level. The reported use of psychotherapy as a treatment of choice in some situations is noteworthy because it appears to reflect the persistent belief that psoriasis is a psychosomatic illness.

Future psoriasis treatments

We were asked also about knowledge of new psoriasis treatments that will become available in Latin America in the near future. As experts in this field, we are all knowledgeable about future therapies, but access to this information by other dermatologists is uneven among countries. According to our responses to the questionnaire, in Argentina, Brazil, and Chile, fewer than 15% of dermatologists are familiar with new psoriasis therapies, whereas approximately 50% are familiar in Colombia, Mexico, and Venezuela. Our expert opinion is that only dermatologists who provide care for patients with psoriasis are sufficiently knowledgeable to understand the mechanisms of action of new medications and to have them prescribed. Some new molecules that are being developed for psoriasis are apremilast, ponesimod, and tofacitinib. Most general practitioners, clinicians, and health system auditors are not yet familiar with these new drugs.

Conclusions

Several conclusions can be drawn from this preliminary review, underscoring unmet needs in the realm of psoriasis. Many other unmet needs will emerge as additional investigations are conducted, new questions are

asked, and information from other countries are incorporated. New epidemiological studies on the prevalence and incidence of psoriasis in Latin America are clearly needed, as the genetic background is different in populations from this region. Registries and international studies of psoriasis that include Latin American populations will be useful data sources at the global level. It is essential that we increase awareness of the disease, strengthen patient associations, intensively and continuously train attending physicians, dermatologists and other specialists, and improve our understanding of the true burden of the disease by conducting more pharmacoeconomic studies. Of even greater importance is our further collaboration to facilitate access to medication and increase availability of new drugs that offer greater effectiveness, fewer side effects, a better quality of life, and less disease burden to all individuals with psoriasis without limitations or restrictions of any kind.

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