

Herbal therapies in rheumatology: The persistence of ancient medical practices

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Abstract

Objective

To determine how frequently herbal remedies are employed as alternative therapies in rheumatic diseases, and the historical justification for their use.

Methods

We conducted a survey in 250 outpatients in the rheumatology clinic of a teaching hospital in México. We registered general demographic information and the previous use of herbal remedies for rheumatic conditions, how effective they were, and the presence of adverse effects during their use. We identified the herbs employed, and cross-checked them with medical texts from the 16th through the 18th centuries on the use of herbal remedies.

Results

Of 250 surveyed patients, 126 (51%) had used herbal remedies for their rheumatic conditions. 63% of all users reported them to be effective for the purpose they had been prescribed. 12% reported adverse effects, none of them life-threatening. Being a user had no relation with the patients' formal education. Three patients did not answer the survey. We were able to identify 67 plants. One third of these are either prescribed for rheumatic conditions in the consulted bibliography, or else were used for the same purpose by ancient Mexican cultures.

Conclusion

Herbal remedies are frequently used for rheumatic conditions. Some of them have an historical antecedent for their use in rheumatic conditions. They deserve a cautious evaluation as adjunctive therapies in rheumatic diseases.

Key words

Alternative therapies, rheumatic diseases, non-conventional therapies, history.

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Introduction

The physician's perspective explaining the disease process which serves as basis of our therapeutic interventions considers the anatomical substrate of disease as the main intervention target (1). The orthodox explanation provided to our patients presents the physician's point of view about disease. The patient's cultural background can profoundly influence the comprehension of the explanatory model offered by physicians (2). If the explanation offered by the physician is not in accordance with his previous beliefs, the consequent discredit can result in a faulty compliance with the prescribed therapy (3). In most chronic conditions for which no cure is available (cancer, rheumatoid arthritis, diabetes mellitus and others) this is a constant risk.

Under these circumstances, the use of alternative therapies is common. We define alternative therapies as medical interventions not generally available in regular hospitals and not taught in medical schools (4). These therapies have logic foundations that make them coherent with the explanatory model of disease causation held by general population, a fact seldom recognized in regular practice. These practices are diverse in different regions of the world. In Mexico, as in most Latin-American communities, modern popular explanatory models of disease are a blend of those held by official medicine during the humoral paradigm and by pre-Hispanic populations (5). We believe that the persistence of these explanatory models is the basis for the use of alternative therapies.

Herbal remedies are a frequent alternative therapy employed in Mexico for rheumatic diseases. We were interested in defining how frequently these remedies were employed by outpatients, how effective they were in our patients' perspective, and if those herbs in regular use have been used for the same conditions in previous centuries.

Materials and methods

We divided our study in two sections. First, we defined the frequency and general conditions of the prescription of herbal remedies in rheumatic dis-

eases. For this, we conducted a survey on the use of herbal therapies in consecutive outpatients attending the rheumatology clinic in a teaching hospital in the central zone of Mexico. The population surveyed included urban and rural patients. We prospectively included all consecutive patients with precise diagnoses, fulfilling previously defined classification criteria (6-15).

Sex, age, and the maximum academic degree attained of each individual were registered in a structured questionnaire. Each patient answered if it was using or had ever used herbal remedies for those ailments which caused their initial consultation with a rheumatologist. We also recorded who made the prescription, what it was, how was it administered, the achieved success with it according to the patient ("In your opinion, was it effective for the purpose it had been prescribed?"), and the presence of any side effects. In each case, the questionnaire was applied after a medical diagnosis had been made and a therapeutic plan had been proposed.

In the second part of the study, we defined which of the herbal remedies reported in our population were used in previous centuries for rheumatic conditions. For this, we identified the herbal remedies used by our patients (16-18). Then we compiled the herbal remedies prescribed in Mexico between 16th-18th centuries (19-28), and cross-referenced the herbs used by our patients with the remedies recommended for various rheumatic syndromes in past centuries in Mexico (29).

Results

For the first part of the study, we surveyed 250 patients. Three of them declined to answer. 126 of the responders (51%) were or had been users of herbal remedies for their rheumatic diseases. 80 patients (63% of all users) reported the remedies employed as effective in reducing swelling, alleviating pain and fatigue, and other frequent symptoms. None of the remedies were prescribed as specific therapies for specific diseases. They were recommended for attacking specific symptoms. In most cases, more than one herbal remedy was prescribed simultaneously. The

frequency of their use and the benefit attained with them in specific rheumatic diseases are shown in Table I. Gout, scleroderma, fibromyalgia, and some vasculitides were included as one group - labeled as "other diseases"- due to the reduced number of patients with each condition.

We identified three main sources through which patients received prescriptions. Relatives or close friends were responsible for the prescription of herbal remedies in 70 patients (56%). Thirty-three patients (26%) had consulted "yerberos". This is the name given to Mexican folk-practitioners whose main therapeutic resource is the prescription of herbs (30). They usually acquire their knowledge through oral tradition. Twenty-three patients (18%) attended holistic practitioners, which also recommended the total suspension of all other therapies, including medications prescribed by the rheumatologist. These were also the most expensive therapies being taken by our patients (data not shown).

The maximum formal education level was similar between herbal remedy users and non-users (Table II). We found no relationship between formal education and the use of herbal remedies in our population ($\chi^2 = p > 0.05$). The individual herbal remedies employed for rheumatic conditions, along with their botanical identification can be consulted in Tables III - VI. In each case, we also present the original references from past centuries recommend-

Table I. Use of herbal therapies in selected rheumatic conditions.

Rheumatic conditions	No. of users (%)	Effective (%) ^a	Adverse reactions (%) ^a
Osteoarthritis (n = 51)	24 (43)	21 (77)	4 (20)
Rheumatoid arthritis (n = 103)	56 (54)	33 (59)	5 (9)
Seronegative spondyloarthropathies (n = 34)	21 (50)	9 (53)	5 (29)
Systemic lupus erythematosus (n = 26)	12 (50)	6 (50)	1 (8)
Other diseases (n = 35)	21 (54)	15 (79)	0
Total (n = 267)	128 (51)	80 (63)	15 (12)

These percentages represent fractions of the total number of users in each disease.

ing their use in rheumatic conditions. Out of 67 identified plants, 27 were used for rheumatic conditions in previous centuries. According to our results, although there is a surprising variety of herbal and non-herbal remedies for rheumatic syndromes in the texts consulted, less than half of the prescriptions described in the original medical texts from the 16th to the 18th centuries are still in use in our patients.

Some of the plants prescribed were in powdered form and our patients could not recall their names. This was the case in 16 prescriptions. We could not identify them, and consequently, they are not included in our tables.

Only 15 patients (12% of all users) reported side effects with the remedies employed. It is worth mentioning that none of them were life-threatening. The list of adverse effects reported can be consulted in Table VII.

Discussion

We conducted a systematic survey

Table II. Maximum level of formal education achieved by the population surveyed.

Formal education	Users	Non-users
None	8	2
Able to read and write	5	11
1 - 6th grade	75	67
7 - 12th grade	38	46
Above 12th grade	6	6

^a = $p > 0.05$, n.s.

among outpatients attending the rheumatology clinic in a teaching hospital to define how frequently herbal therapies are used in Mexico. More than half of the patients (51%) with rheumatic diseases and under regular care by a board-certified rheumatologist use herbal remedies along with their prescribed therapies. This percentage remains constant across different groups in Mexico (31, 32).

The credibility and use of alternative systems of medicine does not seem to depend on the educational level attain-

Table III. Herbal remedies employed by 40 or more of the 250 patients surveyed.

Common name (Spanish)	Common name (English)	Scientific name	Route of administration	Ancient bibliographical support for their use
Ajo	Garlic	<i>Allium sativum</i>	ingested	23
Mariguana	Marijuana	<i>Cannabis sp.</i>	topical	
Arnica		<i>Arnica montana</i>	ingested, topical	
Sábila	Aloe	<i>Aloe barbadensis</i>	ingested, topical	23
Romero	Rosemary	<i>Rosmarinus officinale</i>	ingested	25, 26
Limón	Lemon	<i>Citrus limonum</i>	ingested	
Pino	Pinus	<i>Pinus silvestris</i>	topical	20, 23, 24, 26
Chaya		<i>Cnidoscolus aconitifolius</i>	ingested, topical	
Ruda	Rue	<i>Ruta graveolens</i>	topical	23, 24, 25
Cola de caballo	Greater horsetail	<i>Equisetum hyemale</i>	ingested	
Papa	Potatoe	<i>Solanum tuberosum</i>	ingested, topical	
Manzanilla	wild chamomile	<i>Matricaria recutita</i>	ingested	23, 24, 25
Peyote	Peyote	<i>Lophophora williamsii</i>	topical	28

Table IV. Herbal remedies employed by 22 to 39 of the patients surveyed.

Common name (Spanish)	Common name (English)	Scientific name	Route of administration	Ancient bibliographical support for their use
Menta	Peppermint	<i>Mentha piperita</i>	Ingested, topical	
Gobernadora		<i>Larrea tridentata</i>	Ingested	
Cuilpate		<i>Rawolfia tetraphylla</i>	Ingested	
Perejil	Parsley	<i>Petroselinum hortense</i>	Ingested	23, 24
Cebolla	Onion	<i>Allium cepa</i>	Ingested	
Apio	Celery	<i>Apium graveolens</i>	Ingested	23, 24
Uña de gato		<i>Lantana camara</i>	Ingested	20
Axocopaque	Wintergreen	<i>Gaultheria acuminata</i>	Ingested	25
Damiana		<i>Turnera diffusa</i>	Ingested	
Nopal	Prickly-pear cactus	<i>Opuntia sp.</i>	Topical	25
Naranja	Orange	<i>Citrus aurantium</i>	Ingested	25
Estafiate	Western mugwort	<i>Artemisia ludoviciana</i>	Ingested	25
Albahaca	Sweet basil	<i>Ocimum basilicum</i>	Ingested	
Hierbabuena	Spearmint	<i>Mentha spicata</i>	Ingested	
Eucalipto	Eucalyptus	<i>Eucalyptus globus</i>	Ingested, topical	
Toloache	Jimsonweed	<i>Datura stramonium</i>	Topical	21, 23, 24, 28
Belladona	Deadly nightshade	<i>Atropa belladonna</i>	Topical	
Pasiflora	Passion flower	<i>Passiflora incarnata</i>	Ingested	
Mezquite	Mesquite	<i>Prosopis juliflora</i>	Topical	20
Chicalote	Prickly poppy	<i>Argemone mexicana</i>	Ingested	28
Pirul		<i>Scinus molle</i>	Topical	21, 23
San Nicolás		<i>Gutierrezia sarothrae</i>	Ingested	
Canela	Cinammon	<i>Cinnamomum sp.</i>	Ingested	
Consuelda	Comfrey	<i>Symphitum officinale</i>	Ingested	
Naranja agria	Sour orange	<i>Citrus aurantium var. Amara</i>	Ingested	25
Maguey	Maguey	<i>Agave sp.</i>	Topical	21, 23, 25

Table V. Herbal remedies employed by 10-21 of the patients surveyed.

Common name (Spanish)	Common name (English)	Scientific name	Route of administration	Ancient bibliographical support for their use
Salvia	Sage	<i>Salvia officinalis</i>	Ingested	23, 24, 26
Manzana	Apple	<i>Malus communis</i>	Ingested	23, 24
Malva	Mallow	<i>Malva parviflora</i>	Ingested	23, 26
Guayacán	Guaiacum	<i>Guaiacum sanctum</i>	Ingested	22, 23, 26
Orégano	Origanum	<i>Origanum vulgare</i>	Ingested	
Jitomate	Tomatoe	<i>Lycopersicum esculentum</i>	Ingested	
Piña	Pineapple	<i>Ananas comosus</i>	Ingested	
Alfalfa	Alfalfa	<i>Medicago sativa</i>	Ingested	
Diente de león	Dandelion	<i>Taraxacum officinale</i>	Ingested	
Santa María		<i>Chrisantemum parthenium</i>	Ingested	
Alfilerillo	Stork's bill	<i>Erodium cicutarium</i>	Ingested	
Cilantro	Coriander	<i>Coriandrum sativum</i>	Ingested	
Aguacate	Avocado	<i>Persea americana</i>	Ingested	

ed. The percentage of Mexican patients using folk remedies and the lack of relation between their use and the amount of formal education received was similar in different geographic settings (33). In our experience, most patients using these therapies are comfortable with them and do not report major adverse effects.

One-third of the most frequently prescribed herbal remedies in the surveyed

population have been used for the same purposes over the last three centuries in Mexico. As far as we know, none of the herbal therapies registered has been evaluated by means of double-blind placebo-controlled trials for their use in rheumatic diseases, although compounds obtained from some of these plants are currently under investigation (34-43).

Our patients can be classified as mid-

dle-class and low-class Mexican families. This represents an important limitation to our results. Low-income families are under-represented in our survey because the institution at which it was conducted is not designed to cover such clients by means of medical insurance. Alternative therapies could be the main support to alleviate symptoms in the population not covered by regular medical services.

Table VI. Herbal remedies employed by less than 10 of the 250 patients surveyed.

Common name (Spanish)	Common name (English)	Scientific name	Route of administration	Ancient bibliographical support for their use
Guayaba	Guava	<i>Psidium guajava</i>	Ingested	
Cáscara sagrada	Carolina buckthorn	<i>Rhamnus purshiana</i>	Ingested	
Aceitilla	Spanish needles	<i>Bidens sp.</i>	Ingested	
Lima	Sweet lime	<i>Citrus aurantifolia</i>	Ingested	
Betabel	Beetroot	<i>Beta vulgaris</i>	Ingested	
Berro	Watercress	<i>Nasturtium officinale</i>	Ingested	
Jamaica		<i>Hibiscus sabdaciiffa</i>	Ingested	
Valeriana	Valerian	<i>Valeriana officinalis</i>	Ingested	
Roble	Oak	<i>Quercus sp.</i>	Ingested	24
Zapote	Sapota	<i>Casimiroa edulis</i>	Ingested	
Hierba del perro	Golden ragwort	<i>Senecio vulgaris</i>	Topical	20, 28
Matarique		<i>Cecalia decomposita</i>	Ingested	
Hierba del golpe	Evening primrose	<i>Oenothera rosea</i>	Topical	
Ging seng	Ging seng	<i>Panax sp.</i>	Ingested	
Algas marinas	Algae	<i>Fucus vesiculosus</i>	Ingested	

Table VII. Adverse events reported by the patients surveyed.

Adverse effects	Cases reported*	Stopped treatment
Itching	3	1
Swelling	1	-
Increased pain	4	4
Headache	1	-
Low stamina	1	1
Pirosis	5	2
Drowsiness	1	-

*One patient reported two side effects (itching and increased pain).

The physician's focus is to treat the disease, while patients' main goal is to alleviate their illness (44). Our patients use herbal remedies along with regular therapies for rheumatic conditions. This seems to be safe, according to our results. Only 12% of all users in our series reported adverse effects, and in sharp contrast with NSAID, none of them were life-threatening.

Due to the method employed to collect our information, those patients with life-threatening adverse effects could have been excluded from our results. This seems unlikely, since if the remedies had a high rate of adverse events it seems logical to believe that their regular use would have been discontinued a long time ago. This would not be the case according to our results, since these remedies have been employed for more than two hundred years for the

same ailments.

Another possibility to explain the low frequency of life-threatening or severe adverse effects is that the patients surveyed were under regular medical care while taking the alternative therapies without the knowledge of their treating physician. Perhaps serious adverse effects were detected and treated effectively, but were ascribed to some other of the treatments received.

Herbal remedies were recommended during the course of their disease to at least 90% of the patients surveyed (data not shown). Some of the motives reported for avoiding their use were the disapproval of their regular physician when asked for advice, and a personal lack of confidence in their efficiency. In this regard, it is interesting to note that 3 of every 10 patients also wore a copper bracelet to obtain relief from pain, while half of the users reported not believing it to be effective. Therefore, the lack of belief in the efficacy of a specific remedy does not represent an obstacle to its use.

Patients and physicians have different models to explain disease (45). These explanatory models have little to do with income or the general educational level. Each patient holds an explanatory model of disease that varies with the patient's cultural group. A cultural group is defined as a group of individuals that share common beliefs, ideas, experiences, knowledge, attitudes and behaviors (46). In other words, the cul-

tural group is the community to which the patient belongs.

In Mexico, as in most Latin-American communities, popular explanatory models of disease constitute a blend of the beliefs held by pre-Hispanic populations and the humoral paradigm held by traditional official medicine (47-49). These models of disease are seldom taken into consideration by physicians when prescribing a therapy or explaining a disease to a patient. If the physician's model is in conflict with the patient's model to explain his illness, faulty compliance with the prescription is a strong possibility (50).

Our patients have their own explanatory models of disease. They form the basis for their use of alternative therapies and for other modifications in their daily life, such as the avoidance of cold water when washing hands after cooking, to prevent rheumatic conditions from developing later.

Regarding the consulted texts, they represent medical and popular knowledge regarding the use of herbal remedies accumulated in previous centuries (51). The knowledge of herbal remedies held by Nahuatl physicians is represented by Sahagún and De la Cruz. De la Cruz's view constitutes a blend of Nahuatl and Hispanic medical knowledge, similar to the views presented by Navarro and Vetancurt. None of them were physicians or health professionals.

Gregorio López, Esteineffer, López de

Hinojosos, Hernández, Monardes and Farfán were Hispanic physicians or health practitioners employing some of the rich Nahuatl medical experience in their regular practice. With this selection, we have covered popular and academic knowledge on herbal remedies for rheumatic disease in Mexico from the 16th to the 18th centuries. Thus, the various references to the use of these remedies demonstrate their wide use for rheumatic conditions in the last centuries.

Ortiz de Montellano noted that the persistence of these and other remedies in popular medical practice for such a long time supports the thesis that they offer some beneficial effect against the illnesses for which they are used (52, 53). To date no placebo-controlled clinical trial has been conducted to prove their efficacy as judged by modern standards, however.

The lack of knowledge regarding their clinical efficacy and their mechanism of action do not justify the disapproval of their use by modern medicine. Most of the remedies reported by our patients seem to reduce pain, probably through local analgesia or counterirritation, much like capsaicin. Another possibility is that their effect is mediated through a placebo response. If this is the case, they can still be allowed in specific patients (54), unless we detect an undesirable medical interaction, dependence or adverse effect (55).

These remedies are in accordance with the explanatory model of disease held by our patients. Their compliance and confidence in our regular treatments can be reinforced by allowing the use of such remedies once we are certain of their safety. If, as it does seem, they are effective as adjunctive therapy to relieve pain (56), they could be useful in the regular management of certain patients.

A word of caution should be raised against some alternative practitioners. The use of unlabeled medicines and unidentified herbs should not be encouraged. Patients must also be warned of the risk of death or severe disability if they follow the advice of some alternative practitioners who, as mentioned above, recommend the discontinuation

of recognized effective therapies indicated by rheumatologists.

Physicians cannot offer a cure for chronic diseases. Our task is to manage the course of the disease over time. This has been named the "insulinic model" of therapy, since we are simply adapting patients to a new status (57). Since we can not offer a return to a normal state in most cases, our duty is to maximize the patient's independent functioning and comfort (58). Reassurance with regard to therapeutic initiatives taken by patients and understanding their beliefs concerning disease can improve their quality of life, even if alternative therapies do not produce all the effects hoped for (59).

Alternative therapies exist because they fulfill patients' needs not covered by conventional medicine (60). Physicians are trained to treat diseases, and frequently leave the illness unmanaged. Patients are better suited than physicians to judge whether or not their illness is receiving effective treatment, and they have the right to choose the best options to achieve this. The physician's task is to give an informed opinion on the possible courses of action to be taken in the treatment of chronic conditions. For this, we should always remember that we must try to understand our patient's needs.

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