This manuscript has been accepted after double-blind peer review and will be published in a future issue of this journal. Its content may be subject to a revision of the English language in the final version and the information regarding the volume, number, date of publication and pagination will be adjusted.

https://repository.uaeh.edu.mx/revistas/index.php./MJMR/issue/archive

Mexican Journal of Medical Research ICSa

Biannual Publication, Vol. X, No. 0 (2023) 64-68

ISSN: 2007-5235

Self-medication in ophthalmologic problems. What is known about it?

Automedicación en problemas oftalmológicos. ¿Qué se sabe al respecto?

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Abstract:

Self-medication (SM) refers to any practice for curative purposes that is not prescribed by a physician. It includes the use of conventional medicine (CM) also called allopathic medicine and complementary and alternative medicine (CAM). In ophthalmologic ailments, as in others, the use of CAM has been observed, mainly anesthetics, analgesics and topical antibiotics; for the treatment of traumatic pathologies, with the purpose of saving time and money, advised by the patient's close circle, and having as probable consequence lack of improvement, abuse of the medication, toxicity, masking of the condition and erroneous treatments. In the case of CAM, biological therapies stand out for the variety of products that can be consumed, in addition to the use of mind-body therapies, manipulative and body-based methods; and energy therapies; there are several pathologies for which they are used if compared to CM, and this practice is resorted precisely because of the lack of results with CM, many times under the advice of a circle of trust, for the benefits attributed to them, even thinking that they are harmless, which is wrong according to different studies. In general, it is a subject that is little considered, but relevant due to the risks involved. This manuscript seeks to provide an overview so that medical personnel remain expectant and in each intervention detect the areas of opportunity to reduce this practice.

Keywords:

Self-medication, ophthalmology, conventional medicine, alternative and complementary medicine

Resumen:

Automedicación (AM) hace referencia a cualquier práctica con fines curativos que no es prescrita por un médico. Incluye el uso de medicina convencional (MC) o también llamada alopática y el de medicina complementaria y alternativa (MCA). En los padecimientos oftalmológicos como en los de otro tipo, se ha observado el uso de AM con MC principalmente anestésicos, analgésicos y antibióticos tópicos; para el tratamiento de patologías traumáticas, con el fin de ahorrar tiempo y dinero, aconsejados por el círculo cercano al paciente, y teniendo como probables consecuencias falta de mejoría, abuso del medicamento, toxicidad, enmascaramiento del cuadro y tratamientos erróneos. En el caso de MCA destacan las terapias biológicas por la variedad de productos que se pueden consumir, además del uso de terapias mente-cuerpo, métodos manipulativos y basados en el cuerpo; y terapias de energía; son varias las patologías para las que se emplean si se compara con MC, y se recurre a esta práctica precisamente por la falta de resultados con MC, muchas veces bajo el consejo de círculo de confianza, por los beneficios que les atribuyen, incluso pensando que son inocuas, cosa que es errónea de acuerdo con los diferentes estudios. En general es un tema poco considerado, pero relevante por los riesgos que implican, este manuscrito busca brindar un panorama general para que el personal médico permanezca expectante y en cada intervención detecte las áreas de oportunidad que reduzcan dicha práctica.

Palabras Clave:

Automedicación, oftalmología, medicina convencional, medicina alternativa y complementaria

INTRODUCTION

Self-medication (SM) refers to the use of non-prescribed drugs to treat self-recognized ailments.[1] The prefix self- refers to a practice performed on one's own initiative, although it does not happen that way, as it is usually influenced by non-medical resources.[2] This practice has two aspects, conventional medicine (CM) and complementary and alternative medicine (CAM).[1,3,4] AM with CM or allopathic medicine includes the use of over-the-counter medications, the irregular use of a prescribed drug, and the use of medications remaining from previous prescriptions.[5]

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Received: 18/10/2022, Accepted: 08/11/2022, Published: 05/01/2023

DOI: https://doi.org/10.29057/mjmr.v11i21.10079

The World Health Organization (WHO) defines CAM as the set of health practices that are not part of tradition and are not included in the health system.[6] It is alternative when used in place of CM and complementary when used concomitantly.[7] The National Center for Complementary and Alternative Medicine (NCCAM) has created a classification in order to group the more than 150 practices, dividing them into: alternative medical systems (naturopathy, traditional Chinese medicine, Ayurveda, and homeopathy), mind-body interventions (patient support groups, meditation, prayer, mental healing, and therapies using creative means such as art, music, or dance), biological therapies (herbs, foods, vitamins, minerals, and dietary supplements), and manipulative and body-based methods (therapeutic massage, chiropractic, and osteopathy).[7]

According to a study published in early 2022 the prevalence of SM in Mexico varies between 6.1 and 100%.[5] The percentage of SM with CM was 42.3% and in the case of CAM 30.7%.[5] In this literature review, no data were found on the frequency and types of SM of ophthalmologic conditions in the Mexican population.

The Mexican General Health Law establishes 6 groups of drugs according to the way they are acquired, being of relevance for this manuscript those that fall into IV group, that is, prescription drugs that can be refilled as many times as prescribed; where most of the drugs for ophthalmologic topical use are grouped, as evidenced in the latest list of reference drugs issued by the Federal Commission for Protection against Health Risks (COFEPRIS).[8,9] Few topical ophthalmologic drugs are included in categories V and VI or over-the-counter, which is why pharmacovigilance actions are necessary, including immediate notification by health professionals of suspected adverse drug reactions (ADRs), adverse drug reactions (ADRs), adverse events (AEs), SM, overdose and abuse to the National Center for Pharmacovigilance (CNFV); be informed of the safety data related to the drugs they prescribe and provide feedback to their patients with this information and instruct them on what to do in the event of a problem.[9,10] And according to article 38 of the regulation on health supplies, not only AMR should be reported, but also any event related to other health supplies that may occur during their marketing or use.[11]

SELF-MEDICATION OF OPHTHALMOLOGIC PROBLEMS WITH CM

Traumatic pathology was the main cause of SM with CM: exposure to an arc welding flash, metallic foreign body injuries, chemical injuries with insecticides, traumatic corneal abrasion and exposure to silica dust at work.[12-16] Several studies have evaluated the prevalence of SM with CM, many focusing on specific drugs such as anesthetics, with percentages ranging from 45%-90%, although there are also reports of anti-inflammatory drugs such as dexamethasone with a prevalence of over 50%.[12-14,17-19] Among the reasons reported for resorting to SM are lack of time to go to the medical service, avoiding the expenses involved in medical care and seeking spontaneous relief of symptoms.[12,16,17] The sources of information for the use of these medications were family, friends, neighbors, pharmacy salespeople and internet forums where most of the responses were from other users, optometrists and to a lesser extent ophthalmologists.[18,20] Studies differ in terms of the educational level of SM users with CM, in some it was associated with a higher educational level, but in others people with a lower educational level were more likely to use topical anesthetics.[12,17]

More than 30% of patients were unaware of the use of topical anesthetics and the complications associated with them.[12,17]

Medications were predominantly purchased in pharmacies without a prescription and in other cases were available at the workplace.[12,13,16,17,21]

Drugs

Since most reports of SM with CM in ophthalmologic problems involve topical anesthetics, their importance is inferred. McGee mentions that the 5 most commonly used are: tetracaine, proparacaine, benoxynate (oxybuprocaine), lidocaine, proximetacaine.[21] In other reports the use of proparacaine (52.6-80%) and tetracaine (11.5-20%) also prevail.[12,13,22]

The use of dexamethasone and antibiotics such as tobramazine are also mentioned, but less frequently.[18,19]

Although many of the patients were able to identify the drug applied, this is not always the case, as shown in a study carried out in Spain, in which up to one third of the patients were unable to do so.[14]

Risks of using CM

It would seem that since they are medications for topical use, they do not represent health risks, but studies show the opposite. Regarding topical anesthetics, they are well tolerated, but in cases of home use they can easily fall into a situation of abuse when they are considered to be little or not effective, so their use is increased, which frequently leads to toxicity. This is reflected on the ocular surface where they are applied, inhibiting the migration of corneal epithelial cells and causing direct damage to the microvilli of the cells present, which prolongs the healing process in cases of epithelial defects.[12,16,17,21,23] Clinically it translates into intense pain, tearing, photophobia; and examination findings such as disciform keratitis, peripheral corneal ring, stromal infiltration, conjunctival injection, corneal epithelial defect, contact dermatitis, decreased visual acuity and iris prolapse, mainly.[13,15,16,19,22-26]

Another risk is the masking of the condition by denying the use of a drug and thus starting an inadequate treatment with which there will be no improvement, as a practical example is the confusion between acanthamoeba keratitis and toxicity due to anesthetics.[23,27]

Finally, in a study conducted in 2011 in Nicaragua focused on ophthalmic dexamethasone MA, the following adverse reactions were reported in decreasing order: red eye, burning, pain, inflammation, allergy, secretion, dry eye and watery eye.[18]

SELF-MEDICATION OF OPHTHALMOLOGIC PROBLEMS WITH CAM

As with CM, data are limited regarding SM with CAM in ophthalmologic diseases, with studies reporting prevalences ranging from 21% to 60%.[28-30] In CM, ocular trauma is the main cause of SM, in the case of CAM the symptoms or pathologies are of subacute or chronic course, reporting: ocular pain, glaucoma, inflammatory diseases such as uveitis, scleritis, episcleritis, keratitis, orbital inflammatory disease and optic neuritis; and others that affect the retina, lens and cornea.[14,28-31] The main trigger for resorting to SM with CAM was the lack of results with CM.[28] As in the case of SM with CM, the recommendation comes from the close circle such as family and friends, social networks and Internet pages, adding in this case the press and other health professionals.[28-30]

CAM therapies used

The predominance of one type of therapy over another varies in the different studies, with biological therapies in some cases and mind-body therapies in others.[28-30]

Biological therapies

The studies reviewed a list of remedies such as castor oil, antimony, chamomile, green tea leaves, peppermint, anise, sage, fenugreek, cumin, garlic, lemon, onion, thyme, bilberry and Chinese herbs; as well as diet, use of vitamins and antioxidants.[28-30]

Other therapies

As for mind-body therapies, prayer, recitation of the Koran, Zamzam water, Ruqayya (faith healing) and meditation are reported.[28-30] Manipulative and body-based methods have also been employed in ophthalmological conditions such as cupping and cold compressors.[28,30] And within energy therapies, the use of acupuncture is reported.[28,29]

CAM adjuvant in ophthalmologic problems

It is well known that the use of biological therapies is due to the beneficial effects that patients and their close circle attribute to them, but there is also evidence in the literature that can support it. *Table 1* shows the effects and uses of some botanical compounds that tend to be used in ophthalmological problems.[31-35]

Leaving aside biological therapies, yoga and aerobic exercise have also been shown to produce a decrease in intraocular pressure (IOP) by producing a relaxing effect, as well as marijuana consumption by reducing aqueous production.[35]

Risks of using CAM

Even though some participants in the studies reported some improvement with the use of CAM, others reported no change and even worsened their symptoms.[28,29] Other studies list several adverse effects such as: dizziness, fatigue, abdominal pain, difficulty concentrating, thirst, nausea, insomnia, skin rash, vomiting, and specifically pain with the use of acupuncture, headache in the case of herbs, as well as bad taste with the use of Chinese herbs.[29,30]

Speaking specifically about the use of CAM in glaucoma, an article published in 2014 makes it clear that these therapies cannot be used as substitutes for medical treatment, because of the risks that may occur, such as:

-Intraocular pressure (IOP) increase with the performance of isometric exercise and in certain yoga postures.[35]

-Constant marijuana use due to the short duration of the effect, approximately every three hours.[35]

-Hemorrhagic diathesis with the use of gingko biloba.[35]

-And high consumption of foods containing dietary antioxidants (e.g. red wine, dark chocolate, cocoa, green tea, curcumin, glutathione, polyunsaturated fatty acids) to obtain the beneficial effects.[35]

Table 1. Medicinal plants and uses in ophthalmologic problems

Product	Properties	Diseases
Aloe vera	Reepithelizing Healing Antiseptic	Conjunctivitis Dry eye Dacryocystitis Degenerative diseases
Garlic	Antiseptic Antifungal Anti-inflammatory	Bacterial and mycotic conjunctivitis
Chamomile	Anti-inflammatory Antiseptic	Conjunctivitis Blepharoconjunctivitis Styes Epiphora Ocular irritation Chalazion Inflammation in the ocular area
Plantain	Anti-inflammatory Antiseptic	Conjunctivitis Ocular
Curcumin	Antioxidant Enhancement of calcium-induced proteolysis	Cataracts Chronic anterior uveitis Diabetic retinopathy Glaucoma Macular degeneration Dry eye syndrome
Ginkgo biloba	Antioxidant	Cataracts Improves the pre-existing visual field loss in patients diagnosed with glaucoma
Salvia miltiorrhiza	Antioxidant Anti-inflammatory	Diabetic Retinopathy Glaucoma

Sources: Santiesteban-Puerta S. (2020); Tewari D. (2019); Pescosolido N. (2014); Huynh TP. (2013); Bhartiya S. (2014). Own elaboration.[31-35]

CONCLUSION

MA practices with both CM and CAM should be routinely questioned and patients must be educated about the risks involved to minimize the prevalence and possible side effects. Likewise, when a drug is prescribed, the dosage and adverse effects of its misuse should be fully explained in order to avoid misuse. In addition, it is important to put on the table the issue of restricting the sale of topical medications to avoid SM, abuse and toxicity.

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