Tropicalization of medicine in clinical and research

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OCE's editor

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Tropicalize

It is a verb that in theory does not exist, but in practice it does, and it generally expresses the adaptation or habituation to tropical conditions. But its meaning goes beyond that, and it is a term widely used in companies when considering strategies to globalize products and services.

Same product adapted to different populations and different markets

In fact, it is curious how this editorial topic arose. It was from listening to a podcast by an Argentine engineer and entrepreneur —Magalí Bejar— who was conducting an interview with the founder of a company called Mamotest (Guillermo Pepe). Near the end of the conversation, he mentioned "the need to tropicalize in health" and gave the example of a very advanced solution for breast cancer detection that worked very well in Germany, but had to be modified in order to be applied in countries such as Mexico, Brazil or Argentina, since the "German" version was not as effective.

Same product in different regions, different results; but if it is adapted to the population, the same overall result is achieved

If you still don't understand why we are talking about this in the editorial of a vision science journal with the largest number of scientific papers in Spanish America published in 2023, I will seek to be clearer below.

Mosquitoes

For some years now, it has been studied how climate change is causing some diseases to modify their impact areas, as is the case of dengue[1]. In the Latin American autumn of 2023 in Argentina, a study was published highlighting the spread of dengue to non-traditional areas despite having come from a great drought[2]. Now, at the end of a summer dominated by abundant rainfall, the dengue problem is on the rise with many health implications. This also highlighted indirect problems such as the limited capacity to produce, distribute, and apply repellent products in the general population.

Europe and North America are also on alert for mosquitoes[3-4], in addition to the experience that regions such as Africa continue to have[5]. But I am not only talking about dengue, but also about many other mosquito-borne diseases, such as equine encephalitis, malaria, Zika, chikungunya, yellow fever, just to name a few of the best known.

Mosquitoes and the diseases they can cause in humans are a clear example of the tropicalization of medicine, highlighting the importance of climate, region and ecosystem in general, as well as the genotypic, economic and social characteristics of the population they impact.

Tropicalized" disease: it must be managed by "tropicalizing" the diagnostic and therapeutic tools.

Opportunities for research (with more problems to solve)

Around the fall of 2016 I was at an ophthalmology congress in Buenos Aires along with two colleagues, Alejandro Aguilar and Jorge Linares de la Cal. The three of us represented three regions of Argentina: Central, Patagonia and Litoral, and we were there with the purpose of designing a study to develop a method to detect in tears a disease called Zika, since at that time an outbreak was appearing in our region. I will not go into details since our project did not progress, because between perfecting the protocol and looking for economic sponsorship, the mosquitoes left and Zika patients stopped appearing in the country. We only had a nice memory of a WhatsApp chat called "Mosquitoes are gone". The fact that a potentially good research project does not prosper happens frequently, and sometimes it can be partly a consequence of not tropicalizing an investigation. If we wanted to move forward, we would have had to grow the project globally, tracking Zika cases in its different occurrence areas. We would have had to tropicalize our protocol.

One of the lessons learned is that any research, no matter how regional it may be, must be "thought" globally, even if it is done locally. Thinking about health in a global way will allow us to adapt to different realities: *tropicalized realities.*

Research should be done

There are always research topics that can be relevant to the rest of the community. It is important to analyze what happens in a population in Tilcara, Jujuy, in the north of Argentina, and compare it with another distant and isolated population, for example, in Rio Grande, Tierra del Fuego, well to the south of everything. It is important for a physician to know his own population where his diagnoses and treatments will have an impact. Knowing details related to general aspects sometimes makes a difference, such as body mass index, glycosylated hemoglobin values, or the predominant work activity in the region. Epidemiological studies have socioeconomic implications. They produce something very valuable called knowledge. It is information that serves to make decisions and invest economic resources efficiently. With erroneous epidemiological information, resources are wasted at the expense of health. We seek to make decisions based on evidence, but most of the Latin American scientific production is not in PubMed (at least until now). That is why it is relevant to investigate and create knowledge that describes the behavior of our population.

The OCE tropicalization

Our journal *Oftalmología Clínica y Experimental* (OCE) is a scientific publication that has taken

the best of the concept of tropicalization, as can be seen in the diversity of topics and origins of the papers published so far. In this issue, we highlight several papers that inform us about aspects of gene therapy in Argentina (concepts that may be very useful for other countries in the region), the use of artificial intelligence in the university evaluation of ophthalmology specialists, the regional characteristics of toxoplasmosis, the environmental impact of telemedicine in a region of the Pampa, the subtypes of glaucoma in Bolivia and the preferred ocular surface practices of Latin American ophthalmologists. There are also clinical cases with great educational potential, surgical techniques, and scientific images.

OCE is a journal that adheres to global standards, protects and develops good editorial management practices, advises and helps its authors, thanks its reviewers, and -despite accepting papers in English- prioritizes the Spanish language, since it is the way we communicate among ourselves and with our patients. OCE journal is produced by the Argentine Council of Ophthalmology thinking of all professionals related to vision sciences in Latin America; it is oriented towards ophthalmologists with the vocation and desire to grow in multidisciplinary work, and may also include veterinarians, engineers, biologists, biochemists, pharmacists and all representatives of areas of knowledge related to visual processes. We hope to motivate you and look forward to receiving your next papers.

Referencias

1. Abdalgader T, Pedersen M, Ren D *et al*. Trade-off between climatic and human population impacts on *Aedes aegypti* life history shapes its geographic distribution. *J Theor Biol* 2022; 535: 110987.

2. López MS, Gómez AA, Müller GV *et al*. Relationship between climate variables and dengue incidence in Argentina. *Environ Health Perspect* 2023; 131: 57008.

3. Lühken R, Brattig N, Becker N. Introduction of invasive mosquito species into Europe and prospects for arbovirus transmission and vector control in an era of globalization. *Infect Dis Poverty* 2023; 12: 109.

4. Seok S, Kim Z, Nguyen VT, Lee Y. The potential invasion into North America and Europe by non-native mosquito, *Aedes koreicus* (Diptera: Culicidae). *J Med Entomol* 2023; 60: 1305-1313.

5. Khezzani B, Baymakova M, Khechekhouche EA, Tsachev I. Global warming and mosquito-borne diseases in Africa: a narrative review. *Pan Afr Med J* 2023; 44: 70.