Presentation

THE TRANSITION FROM GENOMICS TO POSTGENOMICS MARKS one of the most profound shifts in the recent history of biomedical science. While genomics —driven by milestones such as the Human Genome Project— focused on DNA sequencing and mapping, the postgenomic era broadens the focus to a functional, dynamic, and integrated understanding of biological systems. This shift has particularly relevant implications for health in Latin America, a region characterized by its genetic diversity, social inequality, and structural challenges in its health systems.

In the field of postgenomics, the primary interest is no longer just identifying genes, but understanding how they interact with each other and with the environment. Disciplines such as proteomics, transcriptomics, and epigenetics allow for the analysis of complex biological processes that determine health and disease. This systemic perspective, intrinsically interdisciplinary, is crucial for addressing multifactorial pathologies such as diabetes, cancer, and cardiovascular diseases, which are highly prevalent in Latin America.

One of the most significant contributions of postgenomics is the development of personalized or precision medicine. This approach seeks to tailor medical treatments to individual genetic characteristics, optimizing therapeutic efficacy and reducing adverse effects. In Latin American countries, where there is significant genetic heterogeneity resulting from the mixing of Indigenous, European, and African populations, precision medicine offers a unique opportunity. However, it also presents significant challenges, since most global genomic studies have been conducted on European populations, limiting the applicability of their results in the region.

In this context, regional initiatives have begun to emerge to bridge this gap. Research projects in countries such as Brazil, Mexico, and Argentina aim to build their own genomic databases, representative of their populations. These efforts are crucial to avoid what some authors call “genomic colonialism” —that is, dependence on data and technologies developed in the Global North without considering local specificities.

Nevertheless, the implementation of postgenomics in Latin American healthcare systems faces numerous obstacles. First, there is a marked inequality in access to advanced technologies. While urban and private centers can incorporate

genomic testing and personalized treatments, large sectors of the population lack access to basic health services. This situation could deepen existing inequalities if inclusive public policies are not designed.

Furthermore, ethical and legal challenges arise. The handling of genetic data raises issues related to privacy, informed consent, and the misuse of information. In many Latin American countries, regulatory frameworks are still incipient or insufficient to address these dilemmas. In addition, the lack of scientific literacy among the population can hinder the understanding of the risks and benefits associated with these technologies.

This issue of **INTER DISCIPLINA** offers an overview of the aforementioned aspects in its dossier, developed by specialists from various regions. It also includes an interview with Dr. Rosa Liascovich, an Argentine specialist in these topics.

The Independent Communications section features five articles on diverse subjects. The issue concludes with a review of the book *Mestizo genomics and health in Latin America*, by Carlos López Beltrán, Peter Wade, Eduardo Restrepo and Ricardo Ventura Santos, a work closely aligned with the dossier's theme. Drawing on research conducted in Mexico, Brazil, and Colombia, the book seeks to understand the genetic, political, and social dimensions that constitute race.

This issue is undoubtedly an important contribution to postgenomics in our geographic region, a field that is emerging as a scientific revolution with enormous potential to transform health in Latin America. ID

Ricardo Mansilla
Editor