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EDITORIAL

Advances and challenges in genetics and genomics in Latin America

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In recent years, Latin America has embarked on an impressive process of technological transformation in the field of health. This revolution has reached all sectors of the medical sciences, driven by the implementation of new therapeutic and diagnostic technologies. Clinical genetics has not been exempt from this reality, with implementation occurring both in the private and public sectors, not only through molecular and cytogenetic diagnostic tools but also through new treatment alternatives for various diseases.

With regard to molecular diagnostics, the adoption of cutting-edge technologies has gone hand in hand with the training of medical and technical staff, enabling the delivery of high-quality responses to the growing demand for precision diagnostic services. Today, we see a group of experts in clinical and molecular genetics advancing collaboratively across multiple fields of knowledge to lead and project this discipline toward new horizons.

In this issue, I have invited distinguished health professionals—geneticists of renown across multiple Latin American countries—to share their vision of a highly technological and forward-looking medicine within their national contexts. Although these visions are independent, they converge on common local efforts, emphasizing newly acquired diagnostic capacities and the challenges that lie ahead. It is important to note that many of these challenges are shared, requiring attention both locally and regionally.

Among these experts are Dr. Herrera-Pas and Dr. Mejía-Mejía, who outline their vision for Honduras and Central America. Representing Colombia, Dr. Carolina Rivera describes the efforts and legislative progress in clinical genetics in that country. From Panama, Dr. Enrique Austin details national achievements and recalls the early contributions of Dr. Ward. Finally, Dr. Luis Flores-Lagunes, representing Mexico, provides an integral outlook on the future and highlights the need to address specific aspects of diagnostic service delivery within the public health system.

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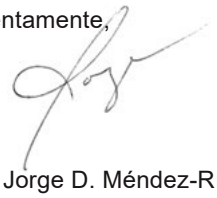
This issue also presents an original study conducted several years ago on the relationship between metabolic syndrome and chronic kidney disease. The work highlights and confirms multiple factors associated with the development of metabolic syndrome in hemodialysis patients. Importantly, the results are consistent with more recent studies, underscoring the need to identify these factors in such groups and suggesting that genetic aspects should also be considered in this population.

Additionally, a group of medical students from the Interamerican University of Panama contributes with a paper describing the structure of a gene and its regulatory elements. This topic is of great im-

portance in the context of clinical genomics, since the evaluation and interpretation of genetic variants—whether single nucleotide changes or copy number variations—must be understood not only in terms of reading sequences but also in relation to regulatory elements that control gene expression.

We hope this issue proves valuable and invite readers to continue contributing to the dissemination of knowledge in clinical genetics and genomics through this academic initiative.

Atentamente,



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