



Editorial

Training in Hepatology: From medical school to a Ph.D. and clinical specialty program



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The liver is a vital organ for the human body. Most importantly, the study of the liver centers around several medical school core courses: anatomy, histology, embryology, biochemistry, molecular biology, physiology, and pathophysiology to understand how it works, diagnose, and treat liver diseases. However, Hepatology did not show up during the initial establishment of the medical specialties. Clinicians who care for liver-diseased patients regardless of the cause come from many different medical training backgrounds, especially if there is no qualified hepatologist at hand. If the etiology is due to viral hepatitis, the infectologists assume they should provide patient care, although the gastroenterologists will believe that the liver belongs to their specialty, and so does the internist. Endocrinologists claim they should be involved due to the recent obesity epidemic leading to diabetes and fatty liver disease. Over the years, the demand for hepatologists, transplant hepatologists, and gastrointestinal endoscopists has increased worldwide. However, the duration of the training time to fulfill a career in Hepatology from medical school, specialty, then a fellowship in liver disease or a Ph.D. program needs to be reduced. This option remains unclear, unattractive, or even too long for many young medical students in some parts of the world, while health and educational experts may not consider it important [1–4].

We all should recall that the study of liver disease received a strong promotion thanks to Dr. Hans Popper and Professor Dame Sheila Sherlock as the pioneers of the initial academic liver meetings that grew into what today is the AASLD, EASL, APASL, and ALEH. The increasing interest in the study of the liver was due to the growth in science and technology in academic medicine and the pharmaceutical industry developing new drugs [5]. Medical, scientific data is currently enormous compared to when the clinical specialties and postgraduate programs began decades ago. Genomic and personalized medicine is a reality in which Big Data analytic methodologies are becoming mainstream in many fields, including Hepatology [6,7]. However, the quality of these databases will rely on the expertise of trained experts in the field, both academic and clinical hepatologists and bioinformatics specialists. These registries can be used for diagnostic and management algorithms to build the clinical practice

guidelines based on the study population's local genetic and environmental factors [7,8].

Thus, a re-evaluation of the medical training programs at the pre-graduate, graduate, and specialty levels is required to speed up the training time in Hepatology. Such restructuring should impact the medical schools' curriculum where introductory courses could be integrated because the gap between basic and clinical sciences has vanished, and this integration can favor medical training. Also, receiving a Ph.D. degree before going into Hepatology can shorten basic and clinic training time, a model that may impact other specialties such as endocrinology, internal medicine, gastroenterology, infectology, cardiology, neurology, genetists, and surgery. A new academic program in Hepatology based on personalized medicine is required to prepare a future workforce in this field focused on preventing chronic conditions, diagnosis and treatment of liver diseases, and other comorbidities associated with obesity and lipid metabolism abnormalities.

We are now in challenging times where educational and health paradigms have changed. The Hippocratic Oath should be extended to reduce the significant morbidities and mortalities that affect our nations, especially developing countries. Furthermore, a culture of scientific integrity and an unbiased relationship between the pharmaceutical industry and academia are needed to solve the many health problems of humanity [9–11].

References

- [1] Luxon BA. Training for a career in hepatology: which path to take? *Curr Gastroenterol Rep* 2010;12:76–81. <https://doi.org/10.1007/s11894-009-0086-3>.
- [2] Russo MW, Koteish AA, Fuchs M, Reddy KG, Fix OK. Workforce in hepatology: update and a critical need for more information. *Hepatology* 2017;65:336–40. <https://doi.org/10.1002/hep.28810>.
- [3] Talwalkar JA, Oxentenko AS, Katzka DA. Health care-delivery research-training opportunities in gastroenterology and hepatology. *Gastroenterol* 2014;146:878–83. <https://doi.org/10.1053/j.gastro.2014.02.017>.
- [4] Gores GJ. Academic gastroenterology and hepatology: training tracts and competencies. *Curr Opin Gastroenterol* 2010;26:234–5.
- [5] Panduro A. Annals of hepatology: a milestone in the history of medicine in Mexico. *Ann Hepatol* 2021;24:100523. <https://doi.org/10.1016/j.aohp.2021.100523>.

- [6] Panduro A, Roman S. Personalized medicine in Latin America. *Per Med* 2020;17(5):339–43. <https://doi.org/10.2217/pme-2020-0049>.
- [7] Panduro A, Roman S. Genomic medicine in gastroenterology: a new approach or a new specialty? *World J Gastroenterol* 2015;21:8227–37. <https://doi.org/10.3748/wjg.v21.i27.8227>.
- [8] Panduro A, Roman S. Advancements in genomic medicine and the need for updated regional clinical practice guidelines in the field of hepatology. *Ann Hepatol* 2020;19:1–2. <https://doi.org/10.1016/j.aohp.2019.12.002>.
- [9] Jose-Abrego A, Panduro A. Building a culture of scientific integrity among the academic and research communities of Latin America. *Ann Hepatol* 2022;27:100655. <https://doi.org/10.1016/j.aohp.2021.100655>.
- [10] Rivera H, Panduro A. Financial and other competing interests: be aware. *Ann Hepatol* 2018;17(6):897–8. <https://doi.org/10.5604/01.3001.0012.7187>.
- [11] Panduro A, Roman S. Need of righteous attitudes towards eradication of hepatitis C virus infection in Latin America. *World J Gastroenterol* 2016;22(22):5137–42. <https://doi.org/10.3748/wjg.v22.i22.5137>.

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