Editorial

Similarities and differences between non-alcoholic fatty liver disease (NAFLD) & alcohol-associated liver disease (ALD)

Alcohol-associated liver disease (ALD) and non-alcoholic fatty liver disease (NAFLD) are commonest causes of chronic liver disease (1,2). In spite of different risk factor, they share common spectrum of fatty liver/steatosis, steatohepatitis, fibrosis, cirrhosis, and hepatocellular carcinoma. However, these two diseases are different on many aspects. With the progress made over the last decade, Translational Gastroenterology and Hepatology feels the need for reviewing the latest updates and identify unmet needs with future prospects on ALD and NAFLD. It is my privilege to guest edit this focused issue, with contributions on various aspects by experts in the respective field. Issues relevant to liver transplantation are not included, as there will be a separate issue on this.

Epidemiology

The epidemiology of ALD and NAFLD described in the first chapter also discusses lean NAFLD, a unique entity in individuals with normal body mass index. As only 10–20% of ALD or NAFLD patients develop cirrhosis, it is worth discussing disease modifiers including epigenetic and genetic factors.

Pathogenesis

Steatosis, the initiating pathology results from excessive inflow of fatty acids due to insulin resistance in NAFLD, and is due to decreased beta oxidation fatty acids in ALD. Herein, we also discuss lipotoxicity and other pathogenic pathways in the gut-liver axis, inflammation, oxidative stress, and fibrosis. In this regard, two focused articles discuss changes in gut microbiome and of mitochondrial dysfunction.

Diagnosis

Documentation of respective risk factor and exclusion of other causes of liver disease is required for diagnosis of ALD or NAFLD. With liver biopsy being invasive, emerging non-invasive serum and radiological markers are discussed for determining the fibrosis stage, the most important determinant in predicting clinical outcomes.

Clinical features

ALD patients more often present at advanced stage compared to NAFLD (3). Clinical similarities and differences between ALD and NAFLD are discussed separately for general features, hepatocellular carcinoma, systemic disease with extrahepatic manifestations, and acute on chronic liver failure (ACLF) presentation.

Treatment

With lack of effective therapies, investigators and industries are collaborating with many newer targets in phase-3 clinical trials. An article updates these trials highlighting study designs and barriers to patient recruitment. To improve patient enrollment, a dedicated chapter discusses ongoing activities on collaboration with industries to develop acceptable and clinically meaningful end points, with criteria for non-invasive diagnosis and long-term follow-up. Finally, there is an original retrospective analysis comparing NAFLD and ALD to highlight cholecystectomy as a risk factor and association with NAFLD.

Finally, as the guest editor, I take this opportunity to thank all contributors and experts from different parts of the world including the USA, Spain, China, and India. I sincerely hope that this issue will be useful for the readers of the TGH, and will
help networking between the investigators to develop new research ideas. Hopefully, this effort will be a drop in the ocean of ongoing activities aiming to accomplish the goal of developing FDA approved safe and effective therapies for ALD and NAFLD.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, Translational Gastroenterology and Hepatology for the series “Non-alcoholic Fatty Liver Disease and Alcoholic Liver Disease”. The article did not undergo external peer review.

Conflicts of Interest: The author has completed the ICMJE uniform disclosure form (available at http://dx.doi.org/10.21037/tgh-2019-nafld-15). Dr. Singal reports other from null, other from null, personal fees from GiLead Pharmaceuticals, non-financial support from American Association for Study of Liver Diseases (AASLD), personal fees from American College of Gastroenterology, grants from American College of Gastroenterology, grants from National Institute of Alcohol Abuse and Alcoholism, during the conduct of the study; grants from National Institute of Diabetes and Digestive and Kidney Diseases, personal fees from GiLead Pharmaceuticals, personal fees from Recordati Pharmaceuticals, personal fees from Alnylam Pharmaceuticals, personal fees from Medscape Gastroenterology, personal fees from Chronic Liver Disease Foundation, personal fees from Up-to-Date, non-financial support from American Porphyria Foundation, outside the submitted work. AKS serves as an unpaid editorial board member of Translational Gastroenterology and Hepatology from Nov 2019 to Oct 2024. The series “Non-alcoholic Fatty Liver Disease and Alcoholic Liver Disease” was commissioned by the editorial office without any funding or sponsorship. Ashwani K. Singal served as the unpaid Guest Editor of the series.

Ethical Statement: The author is accountable for all aspects of work in ensuring that questions related to accuracy or integrity of any part of work are appropriately investigated and resolved.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: https://creativecommons.org/licenses/by-nc-nd/4.0/.

References

Ashwani K. Singal, MD, MS, FACG, FAASLD, AGAF
Department of Medicine, University of SD Sanford School of Medicine, Sioux Falls, SD, USA
(Email: ashwanisingal.com@gmail.com)
Received: 03 March 2020; Accepted: 23 April 2020.
doi: 10.21037/tgh-2019-nafld-15
View this article at: http://dx.doi.org/10.21037/tgh-2019-nafld-15

Cite this article as: Singal AK. Similarities and differences between non-alcoholic fatty liver disease (NAFLD) & alcohol-associated liver disease (ALD). Transl Gastroenterol Hepatol 2020.