Annals of Hepatology
The Official Journal of the Mexican Association of Hepatology, the Latin-American Association for Study of the Liver and the Canadian Association for the Study of the Liver

CORRESPONDENCE
November-December, Vol. 17 No. 6, 2018: 1078-1080

Thrombosis of the Portal Venous System in Cirrhotic Patients

Dear editor,

Cruz-Ramon, *et al.* report on portal vein thrombosis (PVT) in patients with liver cirrhosis.[1] We feel the necessity to avert and cure such underestimated and undertreated complication: PVT often proceeds to severe portal hypertension and bleeding, and correlates with lower life expectancy. A major problem is the wide disparity of treatments. We believe that a comment is warranted, as other possible mechanisms leading to PVT are often overlooked.. These mechanisms include neutrophilic infiltration, a cause of neutrophilic extracellular traps or NETosis,[2] and anti-phospholipid syndrome (APS). Both conditions can be elicited by *Helicobacter pylori (H. pylori)* infection.[3] APS is characterized by anti-cardiolipin antibodies which are also increased in cirrhotics. *H. pylori* infection is a frequent finding in cirrhosis patients,[4] and a well-established cause of autoimmunity, including that one against endothelial cells, as bacterial proteins cross reacts with human endothelial antigens via antigenic mimicry.[5] Moreover, the bacterium secretes a neutrophilic-activating protein (NAP); neutrophilic infiltration of vascular walls may lead to venous thrombosis, that has been recognized involved in atherosclerosis as well, as reviewed by Mozzini.[2] Cirrhotic patients very frequently are also infected by pathogenic strains of *H. Pylori*,[6] which are also known to correlate with acute ischemic stroke and autoimmune thrombotic thrombocytemia. Hence, PVT might benefit by the simple cure of *H.pylori*, which in turn will lower serum levels of anti-phospholipid antibodies,[7] rescind endothelial activation,[8] and decrease circulating levels of pro-inflammatory cytokines.

AP CONCEIVED THE WRITING

All authors contributed to the final manuscript and approved it.

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I, the undersigned author, certify that I have no commercial associations (e.g., consultancies,stock ownership, equity interests, patent-licensing arrangements) that might pose a conflict of interest in connection with the submitted Article, Antonio Ponzetto, Natale Figura.

Manuscript received: August 14, 2018. **Manuscript accepted:** August 14, 2018.

DOI:10.5604/01.3001.0012.7209

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest as regards this work. No grant or funding was received for this work.

Reply

We would like to thank you for your interest in our paper and for taking the time to express your concerns. In your letter to the editor, you note other potential causes of portal vein thrombosis (PVT) as well as the challenge of choosing the appropriate treatment option. We know that treatments and outcomes of acute PVT depend on several factors such as the involvement of the remaining splanchnic circulation, malignancy, liver cirrhosis, inflammatory disorders, and infections.[1]

In this regard, you have postulated the importance of antiphospholipid syndrome in the pathogenesis of PVT in liver cirrhosis. However, a previous meta-analysis did not fully support the association between antiphospholipid antibodies and PVT.[2] In details, the results suggested a significant association of unclassified anticardiolipin antibody with PVT in liver cirrhosis, but not that of IgG anticardiolipin antibody, IgM anticardiolipin antibody, lupus anticoagulant, or anti-b2-glycoprotein-I antibody.

Nowadays, the recommendations for treatment of non-cirrhotic, non-malignant and cirrhotic acute PVT are different.[3,4] Fortunately, at present we have some recommendations for the screening, diagnosis and treatment of patients with PVT by the proceedings of the 7th International Coagulation in Liver Disease Conference.[5]

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The authors declare that there is no conflict of interest regarding the publication of this article.