## Hepatitis D virus infection in patients with hepatitis B virus occult infection

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Aguilera *et al.* [1] have clearly confirmed the usefulness of looking for hepatitis D virus (HDV) in patients showing HBsAg reactivity in serum. However, Ponzetto *et al.* [2], have accurately emphasized the fact that HDV infection may also occur even in the absence of HBsAg detection in serum, as previously showed both in animal models, as well as in humans. Moreover, such results have been recently supported by the dazzling discovery that HDV might be transmitted from infected hepatocytes to descendent cells in spite of the absence of a concomitant HBV infection [3].

In addition to these studies, we have been able to observe HDV infections among Amerindian patients with HBV occult infection [4]. Moreover, we also detected HDV RNA in patients without detectable serological markers for HDV antibodies by using the Food and Drug Administration-approved enzyme-linked immunosorbent assay kits. Such an unexpected result has been preliminarily ascribed to the highly divergent nucleotide-deduced amino-acidic sequence of the HDVAg recorded among some South American patients [4,5], which might, in turn, account for an inadequate recognition of commercially available anti-HDV antibodies, as observed in duplicate in two independent enzyme-linked immunosorbent assay experiments using different commercial lots [4]. This hypothesis was initially proposed, also taking into consideration the dissimilar hydrophobicity plot of the deduced HDAg sequences from some Amerindian patients, as compared with an HDV-1 reference sequence. To further explore this hypothesis, experimental approaches with recombinant HDVAg mutants are in progress in our lab.

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#### *Conflicts of interest*

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### References

1 Aguilera A, Rodríguez-Calviño J, de Mendoza C, Soriano V. Hepatitis delta in patients with resolved hepatitis B virus infection. *Eur J Gastroenterol Hepatol* 2018; 30:1063–1065.
2 Ponzetto A, Ciancio A, Figura N. Delta hepatitis in resolved hepatitis B. *Eur J Gastroenterol Hepatol* 2018; 30:1528.
3 Giersch K, Bhadra OD, Volz T, Allweiss L, Riecken K, Fehse B, *et al*. Hepatitis delta virus persists during liver regeneration and is amplified through cell division both in vitro and in vivo. *Gut* 2019; 68:150–157.
4 Delfino CM, Eirin ME, Berini C, Malan R, Gentile E, Castillo A, *et al*. HDAg-L variants in covert hepatitis D and HBV occult infection among Amerindians of Argentina: new insights. *J Clin Virol* 2012l; 54:223–228.
5 Delfino CM, Cerrudo CS, Biglione M, Oubiña JR, Ghiringhelli PD, Mathet VL. A comprehensive bioinformatic analysis of hepatitis D virus full-length genomes. *J Viral Hepat* 2018; 25:860–869.

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## The creative destruction: the reason why the Turkish Gastroenterology community is ready for the new era: a mini-brainstorm to support the fast-growing and encouraging environment in Turkey

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Acemoglu and Robinson [1] have described the reason why some nations made a great economic move with only a single word 'creative destruction'. Through their well-established book, the readers have not only realized how the big difference between the developed and developing countries has developed over time, but also seen the issues in developing lands needed to be solved immediately in order to make a jump to close the difference.

The feature of the established institutions determines whether a society is open to newness or innovation. As if the economic or political institutions are extractive or absolutist, there is no chance for creativity at all [1,2]. The widely known classical example the reason why the Ottoman Empire had missed the industrial revolution is their restrictive reaction to press innovation. Even though the press technology had developed in 13th century in Germany and spread to whole Europe till the end of the same century, the first attempts to building a press media and print books by using this technology in the Ottoman Empire had taken place not before than 19th century.

In contrast to a popular debate in Turkey whether the productive and innovative capacity is enough to make a big economic difference for the near future, the *Turkish Gastroenterology Society* has recently proven that the term of creative destruction has already been put into real life. In the last few years, most of the practice-changing developments in technologies have been brought to Turkey by young

gastroenterologists. They had not only encouraged by their own mentors and but also supported by the society to be able to learn the new developments mainly in endoscopic technologies as endoscopic ultrasonography and endoscopic mucosal resection or submucosal dissection techniques [3–5]. The traditional ways to treat the biliary tract diseases, to managebiliopancreatic cysts or polyps in gastrointestinal tracts have been dramatically changed by the hands of these young researchers. In addition, these young researchers have continued to conduct valuable basic and clinical studies to understand the pathogenesis of some diseases, or to develop some innovative noninvasive methods to determine underlying liver injury, or to describe new treatment modalities in autoimmune diseases [6–14]. Not only the clinical based studies, but also by building a nation-wide health database covering over 80% of all citizens, reaching more accurate data for academic purpose to conduct outcome studies consisting of real-world data of Turkey has become available recently [15].

The current Associations of Turkish Gastroenterologists do not hesitate to give chance to these innovators to present their findings to the society during national scientific meetings. Moreover, they have supported the young researchers to go abroad to study in their own field of interest to improve themselves and to continue their researches at their own institutions (*http://tgd.org.tr/burslar_ve_arastirma_destegi/burslar*, *http://www.tasl.org.tr/yurtdisi-arastirma-bursu-alanlar*, *http://www.hebipa.org.tr/*, *http://vhsd.org/tr/page/burs-ve-proje-yonetmeligi.html*).

In conclusion, the innovation and it's main driven the allowance of creative destruction by society and established economic and politic institutions is crucial for continued scientific development [1]. This should be supported by free and extraordinary thinking for continued improvement of communities and humankind (*http://www.unesco.org/science/wcs/eng/declaration_e.htm*). However, the major step to be open to creative destruction has put into life by *Turkish Gastroenterology Society*.

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## References


1 Acemoglu D, Robinson JA. *Why Nations Fail: The Origins of Power, Prosperity and Poverty (1st)*, 1st ed. New York, NY: Crown; 2012. p. 529.
2 Acemoglu D, Egorov G, Sonin K. Political model of social evolution. *Proc Natl Acad Sci USA* 2011; 108 (Suppl 4):21292–21296.
3 Aslan F, Akpinar Z, Yurtlu DA, Kucuk M, Ekinci N, Unsal B. Single tunneling method with endoscopic submucosal dissection for treatment of a rectal giant (18-cm) laterally spreading tumor. *Endoscopy* 2017; 49: E114–E116.
4 Aslan F, Akpınar Z, Kucuk M, Arslan Yurtlu D, Unsal B. Multiple tunneling technique for treatment of rectal circumferential laterally spreading tumor with endoscopic submucosal dissection. *VideoGIE* 2017; 2:32–34.
5 Alper E, Arabul M, Aslan F, Cekic C, Celik M, Ipek S, Unsal B. Radial EUS examination can be helpful in predicting the severity of acute biliary pancreatitis. *Medicine (Baltimore)* 2016; 95:2321.
6 Yılmaz Y, Eren F. Nonalcoholic steatohepatitis and gut microbiota: future perspectives on probiotics in metabolic liver diseases. *Turk J Gastroenterol* 2017; 28:327–328.
7 Younossi Z, Tacke F, Arrese M, Sharma BC, Mostafa I, Bugianesi E, *et al*. Global perspectives on non-alcoholic fatty liver disease and non-alcoholic steatohepatitis. *Hepatology* 2018. [Epub ahead of print].
8 Efe C, Ozaslan E, Purnak T. Second-line immunosuppressants for autoimmune hepatitis. *Eur J Gastroenterol Hepatol* 2018; 30:490–491.
9 Efe C, Hagström H, Ytting H, Bhanji RA, Müller NF, Wang Q, *et al*. Efficacy and safety of mycophenolatemofetil and tacrolimus as second-line therapy for patients with autoimmune hepatitis. *Clin Gastroenterol Hepatol* 2017; 15:1950–1956.e1.
10 Zeybel M, İdilman R. Serum biomarkers for the evaluation of liver fibrosis: the need for better tests. *Turk J Gastroenterol* 2018; 29:377–378.
11 Yiğit B, Boyle M, Özler O, Erden N, Tutucu F, Hardy T, *et al*. Plasma cell-free DNA methylation: a liquid biomarker of hepatic fibrosis. *Gut* 2018; 67:1907–1908.
12 Zeybel M, Luli S, Sabater L, Hardy T, Oakley F, Leslie J, *et al*. A proof-of-concept for epigenetic therapy of tissue fibrosis: inhibition of liver fibrosis progression by 3-deazaneplanocin A. *Mol Ther* 2017; 25:218–231.
13 Altinbas A. A quick overview to the early phase clinical trials of Simtuzumab®: are we loosing the most promising anti-fibrotic product? *Med Hypotheses* 2017; 108:159–160.
14 Lidofsky A, Holmes JA, Feeney ER, Kruger AJ, Salloum S, Zheng H, *et al*. Macrophage activation marker soluble CD163 is a dynamic marker of liver fibrogenesis in human immunodeficiency virus/hepatitis C virus coinfection. *J Infect Dis* 2018; 218:1394–1403.
15 Altinbas A, Baser E, Burkan A, Ertugay E, Kariburyo MF, Baser O. Retrospective analysis of total direct medical costs associated with hepatitis B patients with oral antiviral versus pegylated interferon therapy in Turkey. *J Viral Hepat* 2014; 21:794–801.


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