Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Autoimmune hepatitis following SARS-CoV-2 vaccine: May not be a casuality

To the Editor:

We read with interest the article: "Autoimmune hepatitis developing after coronavirus disease 2019 (COVID-19) Vaccine: Causality or casualty?" by Bril F. *et al.*[1] and the comment to the letter by Capecchi L. *et al.* recently published in *J Hepatol.*[2]

Although the onset of autoimmune hepatitis (AIH) in a young woman in the post-partum period, the presence of eosinophils at liver histology, and the short period elapsed after vaccine administration may support a coincidental association between AIH and SARS-CoV-2 vaccine,[2] we recently observed a case of an 80-year-old woman who developed AIH 1 week after completing the schedule of Pfizer-BioNTech BNT162b2 mRNA vaccination. She was referred to our institution because of the recent onset of jaundice, hyperchromic urine, and elevated liver enzymes. The patient did not report smoking or alcohol use. Medical history included Hashimoto's thyroiditis on treatment with levothyroxine and an episode of acute glomerulonephritis in 1995 regressed after a cycle of corticosteroids. Current therapy was cholesterol-lowering pravastatin and aspirin for primary cardiovascular prevention. Physical examination was normal except for jaundice. Laboratories were significant for aspartate aminotransferase (AST) (1,401 IU/L; nl 0–40), alanine aminotransferase (ALT) (1,186 IU/L; nl 0–40) bilirubin (total 10.5 mg/dl; direct 7.5 mg/dl), alkaline phosphatase (ALP) (243 IU/L; nl 30-120) and gamma-glutamyl transferase (GGT) (524 IU/L; nl 7-44).

Hepatitis A, B, and C virus markers and HIV, Cytomegalovirus, Epstein Barr, Herpes simplex type 1 and 2 serology were negative. Ceruloplasmin and α1-antitrypsin levels were normal. The anti-mitochondrial, anti-smooth muscle, anti-liver-kidney microsomal antibodies were negative, while the antinuclear antibody (ANA) was positive (1:160, speckled pattern). Total IgG was 3,500 mg/dl (normal range: 750–1,600 mg/dl). Abdominal ultrasound showed enlarged reactive hilar lymph nodes (diameter up to 31 mm). Interface hepatitis with a moderate degree of lymphoplasmacytic infiltrate and multiple confluent foci of lobular necrosis with Councilman bodies were found at liver histology. According to the International Autoimmune Hepatitis Group (IAIHG) criteria,[3] the patient's pre-treatment score was 19. The patient started a treatment schedule with prednisone at a dose of 1 mg/kg/day and subsequent tapering of 10 mg/week with a progressive improvement of the laboratory tests (Fig. 1).

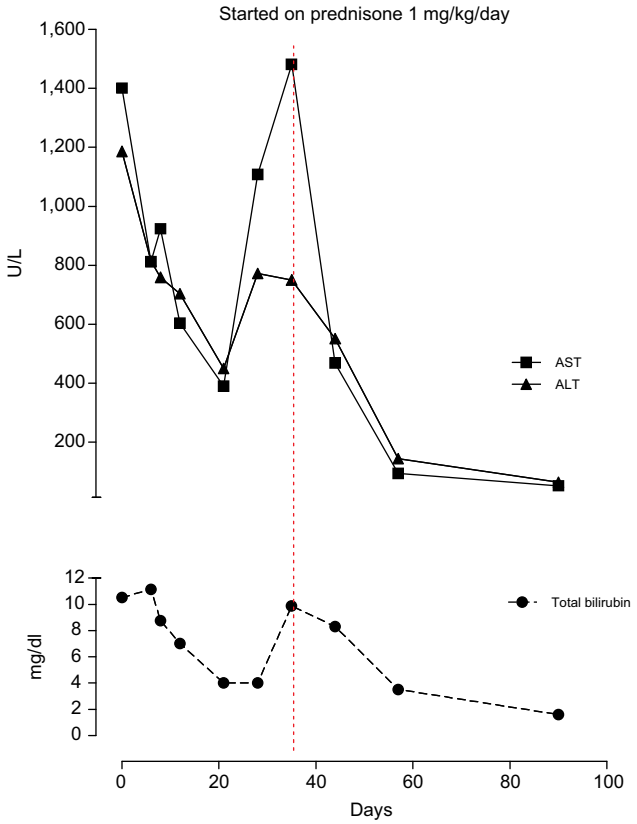

Fig. 1. Trends of plasma ALT, AST, and total bilirubin over time. ALT, alanine aminotransferase; AST, aspartate aminotransferase. (This figure appears in color on the web.)

Keywords: Autoimmune Hepatitis; Covid-19 vaccine; SARS-CoV-2 infection.
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Several pathogens, such as Epstein–Barr, varicella-zoster, and hepatitis A viruses, can trigger AIH onset.[4] In addition, some reports described a relationship between vaccination (*i.e.*, hepatitis A and influenza virus) and the development of AIH,[5–8] suggesting a potential role of both virus and vaccine in unmasking AIH in predisposed individuals. Thus, the occurrence of acute or chronic liver disease following viral infection or vaccination should raise the suspicion of AIH in the presence of other autoimmune disorders.

Although the causal link between the SARS-CoV-2 vaccine and AIH cannot be definitively established, our case report suggests that this association could be more than coincidental. Indeed, the medical history negative for liver disease as well as the coexistence of another autoimmune disorder, the reasonable lag time between exposure to the triggering factor, the typical onset of symptoms, the laboratory/histopathological findings and finally the excellent response to therapy are all pieces of the puzzle that reinforce the hypothesis of an association between AIH and SARS-CoV-2 vaccination.

In summary, since the vaccination campaign against SARS-CoV-2 is reaching extraordinary coverage rates, healthcare providers should be aware of the potential association between the vaccine and the onset of immunomediated disorders in patients with a history of autoimmune diseases.

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Conflict of interest
Alba Rocco, Costantino Sgamato, Debora Compare declare no conflict of interest.

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Please refer to the accompanying ICMJE disclosure forms for further details.

Authors' contributions
Alba Rocco, Costantino Sgamato and Debora Compare: patient care, writing of the manuscript, and revision of the final version of the manuscript. Gerardo Nardone made a critical revision of the letter to the Editor.

Supplementary data
Supplementary data to this article can be found online at https://doi.org/10.1016/j.jhep.2021.05.038.

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L-GrAFT and EASE scores in liver transplantation: Need for reciprocal external validation and comparison with other scores

To the Editor:

We read with great interest the recent article by Agopian *et al.* on the validation of the liver graft assessment following transplantation (L-GrAFT) score for prediction of early allograft failure (EAF).[1] EAF was defined as the failure of the graft (identified by retransplant or death) for any reason at 90 days after liver transplantation.[1,2] Adopting an innovative "kinetic" approach which included calculation of the AUC and slope of aspartate aminotransferase, bilirubin, platelet count, and international normalized ratio (INR), the L-GrAFT[1,2] was reported to outperform both the model for early allograft function (MEAF)[3] and early allograft dysfunction (EAD)[4] scores,

Keywords: Liver transplantation; Early Allograft Failure; Primary non-function; Primary dysfunction; Delayed non-function; Prognostic Score; EASE score; Smartphone Calculator; Outcome; Re-transplant; Unsustainable-risk class; DCD; Machine Perfusion.
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