Received: 7 May 2022 | Accepted: 15 May 2022

DOI: 10.1111/liv.15350

Liver INTERNATIONAL WILEY

LETTER TO THE EDITOR

Autoimmune hepatitis (AIH) following coronavirus (COVID-19) vaccine—No longer exclusive to mRNA vaccine?

Letter to the Editor

The devastation from the COVID-19 pandemic has led to vaccines being developed and used without much known about its adverse events. However, absence of evidence does not mean evidence of absence. We read with great interest the article by Fimiano et al.[1] and other reports of the AIH post-COVID-19 vaccine; with the majority of cases associated with the use of the mRNA vaccine.[1–4]

We report a case series on AIH secondary to the COVID-19 vaccine (Table 1). The first case involved a 59-year-old woman with dyslipidaemia who developed jaundice after the second dose of COVID-19 AstraZaneca vaccine (AZD1222). She had previously consumed supplements but these had been discontinued prior to her symptoms.

The second case similarly occurred post AZD1222 vaccine, involving a 63-year-old woman with long-standing ulcerative colitis (UC) and primary sclerosing cholangitis (PSC), which was reported by Nik et al.[5] She was in clinical remission with stable liver function tests (LFT) and no recent change in medication, presented with a new onset of jaundice after her first Covid-19 vaccine.

The third case is that of a 72-year-old lady, not known to have any medical illness nor on any medication, who was initially vaccinated with 2 doses of CoronaVac vaccine uneventfully, and presented with jaundice after being given Pfizer-BioNTech booster vaccine. Viral hepatitis results and abdominal imaging for all three patients were negative and normal respectively.

They were diagnosed as AIH and initiated with prednisolone 40 mg once daily for 2 weeks, with tapering doses subsequently. In the first and third cases, LFT normalized and both patients remained well. In the second case, LFT initially improved but she was readmitted 2 weeks later and unfortunately succumbed to overwhelming sepsis.

Fimiano et al. indicated that we may either be dealing with drug-induced acute hepatitis with autoimmune features, or 'real' AIH triggered by Covid vaccines.[1] It is interesting to note from our series that vaccine-induced AIH occurred in both mRNA and non-mRNA vaccines. mRNA vaccine has been suggested to cause upregulation of immune pathways similar to that in autoimmune diseases.[1–4] However, AZD1222 is non-mRNA and uses deactivated adenovirus

TABLE 1 Demographics, laboratory and histopathological characteristics of patients with autoimmune hepatitis following COVID-19 vaccination at University Malaya Medical Centre (UMMC)

Patient	Age (years)	Gender	Latency (Days)	ALP/AST at presentation (U/L)	ALP/ALT at presentation (U/L)	Bilirubin at presentation (μmol/L)	Antibodies	IgG (mg/dL)	Liver biopsy results
1	59	Female	12	189/962	189/1178	126	–	1740	Lympho-plasma-cellular portal infiltrates with no biliary features
2	63	Female	14	299/505	299/354	313	ANA	2030	Bridging fibrosis consistent with underlying PSC. Presence of interface and lobular hepatitis
3	72	Female	10	125/1452	125/2280	29	AMA	1940	Portal inflammatory cell infiltration comprises mostly of lymphocytes and plasma cells with foci of lobular inflammation and hepatocyte necrosis

to trigger an immune response. Hence, the definitive causality of AIH post-Covid-19 vaccination is difficult to ascertain but there is a possible causal link.

As COVID-19 vaccination continues, with booster vaccination and vaccination of adolescents, we wish to highlight that AIH is a potential adverse event and that it does not only occur with the use of the mRNA vaccine.

CONFLICT OF INTEREST

Authors declared no conflict of interest.

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