Impact of COVID-19 in patients with autoimmune bullous diseases

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COVID-19 SPECIAL FORUM - LETTER TO THE EDITOR

Impact of COVID-19 in patients with autoimmune bullous diseases: Report from an international registry

Dear Editor,

For autoimmune bullous diseases (AIBD) such as bullous pemphigoid (BP) and pemphigus an increased risk of COVID-19 infection and mortality was reported, with oral prednisolone (dose ≥10 mg/day) and treatment of rituximab being a risk factor.[1,2] A population-based cohort study showed an increased COVID-19 associated mortality in patients with BP, but not in patients with pemphigus vulgaris.[3] Here, we provide the findings of an international registry for health care providers about COVID-19 infection in patients with AIBD, reporting on timing and clinical presentation of COVID-19 infection, AIBD disease activity and outcome.

For this international online registry (RECOVAB registry), dermatologists reported de-identified data of patients with AIBD after symptomatic COVID-19 infection for the period from June 2020 to December 2021 according to a predefined input mask. Diagnosis of COVID-19 was based on positive polymerase chain reaction test, symptoms and confirmative chest computer tomography scan, or detected anti-SARS-COv-2 antibodies. Included were 69 patients with a mean age of 63 years (19–94), 38 (55%) were female.

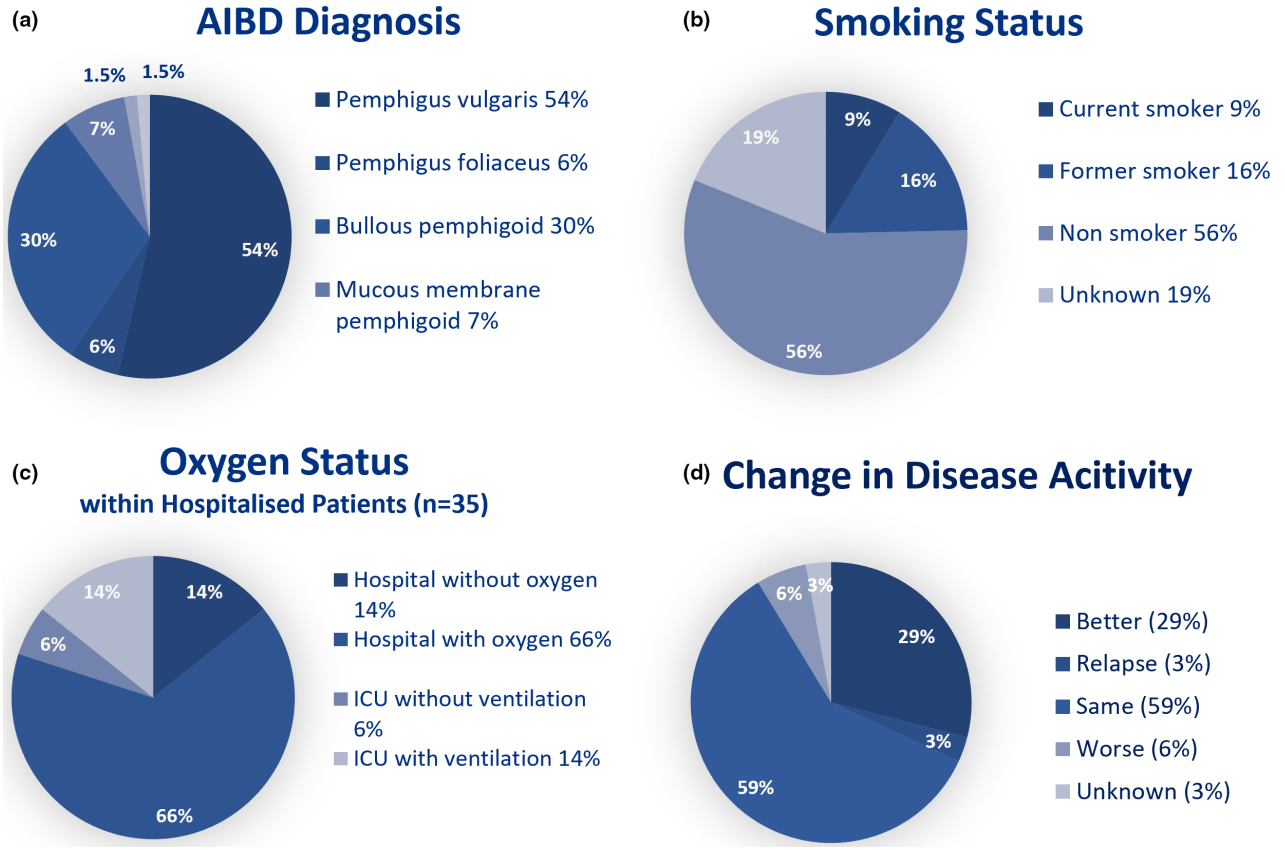

FIGURE 1 Summarized findings in patients with autoimmune bullous diseases (AIBD) and COVID-19 infection, reporting (a) AIBD diagnosis, (b) smoking status, (c) oxygen status within hospitalized patients, and (d) change in AIBD disease activity.

The distribution of AIBD diagnoses is depicted in Figure 1a. Cases were reported by clinicians from Italy (33), Turkey (7), Czech Republic (6), Germany (6), Greece (6), the Netherlands (4), Serbia (3), United States (Iowa, 1), Israel (1), Spain (1) and the United Kingdom (1).

The reported mean duration of COVID-19 symptoms was 17.3 days (0–63), whilst the most common symptoms experienced were fatigue, fever, cough, myalgia and headaches. The smoking status of the patients is portrayed in Figure 1b. During COVID-19 infection, 34 of 69 patients (49%) were treated at home, whilst 35 of 69 (50%) required hospitalization and diverse oxygen supplies (Figure 1c). The COVID-specific treatment administered at that time varied from corticosteroids (28%), hydroxychloroquine (17.4%), remdesivir (6%) and other medications (49%). Table 1 summarizes the AIBD systemic treatment patients received before and after COVID-19 infection. Mean systemic corticosteroid dose was 15.4 mg/day (n = 50). Rituximab was suspended from 16 (23%) to two (3%) patients. Respectively, the change in disease activity of AIBD before and after COVID-19 infection is shown in Figure 1d.

A total of 58 patients (84%) recovered from COVID-19. Death occurred in nine patients (13%) with a mean age of 84.3 years; 6 of the 9 patients (67%) of them died during hospitalization for COVID-19 infection. The deceased group included 6 patients (67%) with BP and 3 (33%) with pemphigus. Those with BP also suffered from various comorbidities including dementia, chronic kidney disease, diabetes and being bedridden. Of deceased patients, 3 (33%) had active AIBD, while 6 (67%) were in complete remission on therapy.

Elevated COVID-19-associated mortality among patients with BP has previously reported in a population-based cohort study from 2020, while the use of systemic corticosteroids and immunosuppressive adjuvants did not predict worse COVID-19 outcomes.[3] A systematic review of patients with AIBD and immunomodulating therapies did not reveal a higher rate of COVID-19 infection or more severe disease course.[4] Being reported as a risk factor for mortality, treatment with rituximab was frequently suspended (Table 1).[2,5] Other immunomodulatory treatments were mainly continued to control disease activity, a recommendation still applicable during present COVID-19 outbreaks for patients not being vaccinated.[6]

This study is not without limitations. As a registry study, reporting bias with higher reporting of more severe or fatal cases cannot be excluded. Furthermore, the geographical distribution of reported patients was unbalanced.

In summary, this international registry showed a rather stable disease activity in the majority of AIBD patients following COVID-19 infection. Increased risk of death appeared to be associated with diagnosis of BP and high age. In the eventuality of novel pandemic waves, a decrease in treatment with rituximab is advisable for patients not being vaccinated.

TABLE 1 Reported systemic treatment for AIBD before and after COVID-19 infection.

Systemic treatment for AIBD	Before COVID-19 *n* = 69 (%)	After COVID-19 *n* = 60[a] (%)
Corticosteroids	50 (72.5)	39 (65)
Azathioprine	7 (10.1)	6 (10)
Dapsone	12 (17.4)	9 (15)
Mycophenolate mofetil	10 (14.5)	8 (13.3)
Methotrexate	3 (4.3)	1 (1.7)
Rituximab	16 (23.2)	2 (3.3)
None	12 (17.4)	10 (16.7)
Unknown	1 (1.5)	1 (1.7)

AIBD; autoimmune bullous diseases.

[a] *n* = 60 post-COVID-19 due to fatalities.

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None.

CONFLICT OF INTEREST STATEMENT

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ETHICS STATEMENT

UMCG Ethics Review Board METc 2020/258 protocol reviewed and considered the research did not fall within the scope of the Medical Research Involving Human Subjects Act (WMO). No approval needed. Research complied with EU General Data Protection Regulation (GDPR).

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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