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Research Article

Outcomes of COVID-19 in Patients with Pemphigus and Bullous Pemphigoid: A Retrospective Comparative Study

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ABSTRACT

Introduction: SARS-CoV-2 infection has rapidly spread around the world. Autoimmune Bullous Diseases are associated with higher potential risk factors for infections. The aim of this study is to compare the characteristics of COVID-19 infection in patients with pemphigus and patients with bullous pemphigoid.

Patients and methods: This is a retrospective comparative study conducted in the department of dermatology and venereology of Casablanca in Morocco. Patients with bullous pemphigoid and pemphigus disease with comparable age and sex followed up between January 2015 and January 2021 were included in this study.

Results: Eighty-one patients were included in this study. Thirty (37%) patients had bullous pemphigoid and fifty-one (63%) patients had pemphigus. Demographic characteristics and disease duration were comparable in the two groups ($p>0.05$). Hypertension and diabetes were more common in patients with bullous pemphigoid ($p<0.05$). Eight (27%) bullous pemphigoid patients reported contact with confirmed COVID-19 patients, seven (87.5%) of them experienced COVID-19 while sixteen (31%) pemphigus patients reported contact with confirmed COVID-19 patients, nine (56%) of them experienced COVID-19 ($p>0.05$). The mean percentage of pulmonary involvement was 68% in bullous pemphigoid patients versus 29% in pemphigus patients ($p<0.05$). Four (57%) bullous pemphigoid patients needed intensive care facilities versus one (11%) pemphigus patient ($p<0.05$).

Conclusion: Systemic steroids and immunosuppressive agents do not predispose to a severe course of COVID-19. Therefore, suspension of these treatments is not advised. Bullous pemphigoid patients should be monitored closely because of their old age and comorbidities.

Keywords: COVID-19, Autoimmune bullous diseases, Pemphigus, Bullous pemphigoid

List of abbreviations: AIBDs: Auto Immune Bullous Diseases; BP: Bullous Pemphigoid

Introduction

SARS-CoV-2 infection emerged in China and rapidly spread around the world [1]. In Morocco, higher mortality rates have been described in the older population and in patients with co-morbidities [2]. Autoimmune Bullous Diseases (AIBDs) are potentially fatal disorders associated with higher potential risk factors for infections and requiring high-dose systemic steroids and immunosuppressive therapies [3]. Previous studies concluded that patients with AIBDs had increased risk and more aggressive course of COVID-19 [4,5], but most others refuted this finding [6-8]. Since bullous pemphigoid (BP) and pemphigus are the most frequent AIBDs, the primary objective of this study is to compare the characteristics of COVID-19 infection and its complications in patients with BP and patients with pemphigus.

Main body

This is a retrospective comparative study conducted in the department of dermatology and venereology of Casablanca in Morocco, between January 2015 and January 2021. Patients with BP and pemphigus disease with comparable age and sex followed up in this period were included in this study. The diagnosis of COVID-19 was based on typical clinical findings and positive real-time PCR for SARS-CoV-2.

Eighty-one patients with AIBDs were included in this study. Twenty-four (30%) patients reported contact with confirmed COVID-19 patients, sixteen of them (66%) were tested positive with COVID-19, nine of them had been hospitalized (56%): five (31%) needed intensive care facilities, and four (27%) died. SARS-COV-2 was detected in fourteen (17%) patients by RT-PCR. CT-scan was performed on ten (62.5%) patients. Thirty (37%) patients had BP; the average age was 65 with a sex ratio of 1. Fifty-one (63%) patients had pemphigus; the average age was 57 with a sex ratio of 0.6. Demographic characteristics and disease duration were comparable in the two groups ($p>0.05$). Hypertension and diabetes were more common in patients with BP ($p<0.05$). Forty-four (86%) patients with pemphigus were under systemic steroids, twenty-six (59%) of them were on >10mg daily, while only eleven (37%) BP patients were on systemic steroids ($p<0.05$). Eight (27%) BP patients reported contact with confirmed COVID-19 patients, seven (87.5%) of them experienced COVID-19 while sixteen (31%) pemphigus patients reported contact with confirmed COVID-19 patients, nine (56%) of them experienced COVID-19 ($p>0.05$). Both BP and pemphigus patients experienced mild to moderate symptoms: flu-like symptoms, cough, low grade fever, anosmia, ageusia ($p>0.05$). Five (71%) PB patients experienced severe symptoms: pneumonia with respiratory failure versus one (11%) pemphigus patients ($p<0.05$). The mean percentage of pulmonary involvement was 68% in BP patients versus 29% in pemphigus patients ($p<0.05$). Four (57%) PB patients needed intensive care facilities versus one (11%) pemphigus patient ($p<0.05$). All pemphigus patients were recovered versus three (43%) BP patients ($p<0.05$). None of the patients had discontinued their immunosuppressive therapies and none of the patients with confirmed COVID-19 experienced disease recurrence.

The findings of a previous study shows that the main risk of developing a COVID-19 infection was contact with confirmed COVID-19 patients(6). In our study, all positive patients reported contact with confirmed COVID-19 patients, and the incidence rate of COVID 19 was similar in both groups with comparable age and sex, although we did not compare patients with AIBDs with a control group. Although old age and comorbidities such as hypertension and diabetes represent major risk factors for complicated COVID-19, the role of immunosuppression is controversial. In our study, we could not conclude that systemic steroids and immunosuppressive agents predict severe COVID-19 illness, since patients with pemphigus in our study were more often under these treatments and have not developed severe course of COVID-19 unlikely to PB patients. A previous study found that COVID-19 associated mortality was significantly elevated among patients with PB [6]. In our study, PB patients had significantly more comorbidities such as hypertension and diabetes which can explain the severe course of COVID-19 in these cases. This study has several limitations because of the retrospective design, undetected mild cases, and the low number of patients that we have collected. Also, it would be interesting for future studies to include pemphigus and PB patients with comparable comorbidities to assess the risk of severe courses of COVID-19 as well as mortality rate in PB patients.

Conclusion

Systemic steroids and immunosuppressive agents do not predispose to a severe course of COVID-19. Therefore, suspension of these treatments is not advised. Although we could not prove a higher risk of severe COVID-19 infection in PB patients, these patients should be monitored closely because of their old age and comorbidities.

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