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Original Research Article

The Diagnosis and Treatment Methods of the Autoimmune Blistering Diseases

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Abstract: ***Background*:** Autoimmune blistering disorders are a group of rare skin diseases. They develop when your body's mucous membranes the lining of your mouth, nose, and other cavities and skin are attacked by your immune system. Blisters grow as a result of this. ***Objective*:** The main goal of this study is to determine the diagnosis and treatment methods of the autoimmune blistering diseases in Bangladesh. ***Methods*:** A cross sectional study was conducted in a total of 260 patients from January 2021 to December 2021 in 250 Bedded General hospital, Jamalpur, Bangladesh. ***Results*:** In our study, 55% patients were male and 45% patients were female. Maximum patients (19.6%) were between 30 to 39 years of age group. Minimum number of patients (13.2%) were between 20 to 29 of age group. Maximum patients (75) had pemphigus vulggaris and minimum number of patients (15) had pemphigus foliaceus. Maximum patients were treated with steroids (51) and azathioprine (53). Minimum number of patients (10) were treated with cyclosporine. Side effects like (Cushing syndrome, Growth retardation, Osteoporosis) were observed in patients treated with steroids (6), Neutropenic sepsis (4) in Rituximab, Hemolytic anemia (3) in Dapsone and Nausea (4) in Azathioprine. 141 patients had complete remission off therapy and 119 patients had partial remission on therapy. ***Conclusion*:** As the population ages, more people will eventually require treatment for autoimmune skin illnesses that cause blistering. Rituximab, infliximab, etanercept, leflunomide, doxycycline, omalizumab, and immunoadsorption are currently being explored in controlled prospective trials since there is an urgent need for specific and well-tolerated medicines. Prospective, controlled trials are still needed to verify the effectiveness of the present treatments.

Keywords: Diagnosis and treatment methods, autoimmune blistering diseases Bangladeshi Population.

INTRODUCTION

Autoimmune blistering skin diseases are a heterogeneous group of conditions clinically characterized by blisters and erosions on the skin and close-to surface mucous membranes. Autoantibodies in pemphigus illnesses target desmosomal proteins, resulting in a loss of cell contact in the epidermis. Medication for autoimmune blistering disorders (AIBDs) aims to induce and maintain remission, which clinically equates to the end of new vesicle production, the healing of previous erosions, and the end of treatment tapering [1, 2]. Therefore, preventing relapse over the long run and avoiding the negative effects of repeated corticosteroid and immunosuppressive drug use are significant challenges [3]. Randomized controlled trials (RCTs) have made limited progress due to the rarity of this group of disorders. The US Food and Drug Administration (FDA) recently approved rituximab as a promising therapeutic drug for the

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treatment of pemphigus. Rituximab has been reported in subepidermal autoimmune blistering illnesses to a lower extent (s-AIBDs) [4, 5]. A number of potential new therapeutic drugs have also recently emerged for the treatment of s-AIBDs like pemphigus [6].

Autoimmune blistering diseases can be divided into different groups based on the level of the skin where the blister develops and the structural proteins that the autoantibodies target. For example, in the pemphigus group, autoantibodies target desmosomal proteins, which results in a loss of cell adherence between keratinocytes; in pemphigoid diseases, hemidesmosomal proteins of the dermo-epidermal junction are targeted; and in derma Due to their rarity and diverse clinical symptoms, autoimmune blistering dermatoses can present a significant diagnostic difficulty. They are diagnosed using a combination of clinical and laboratory data. The identification of tissue bound and circulating autoantibodies, which continues to be the diagnostic gold standard in the detection of autoantibodies, is required because diagnosis cannot be made merely on the basis of clinical symptoms and histological findings. Additionally, sensitive and precise serological tests have been created to enable the detection of serum antibodies, which are employed as diagnostic instruments and as a way to track the progression of diseases.

OBJECTIVE

The main goal of this study is to determine the diagnosis and treatment methods of the autoimmune blistering diseases in Bangladesh.

METHODS

Study Type: It was a cross sectional study.

Place of study: 250 Bedded General hospital, Jamalpur, Bangladesh.

Period of study: From January 2021 to December 2021.

Study sample: Total 260 patients were included in this study**.**

Sample technique: Purposive sampling was done.

Data Analysis

Data were processed and analyzed by using computer software SPSS (statistical package for social sciences) version 25. Data were evaluated by descriptive statistics for mean, percentage, and standard deviation etc. P-value of <0.05 was considered statistically significant.

RESULTS

Figure 1 is showing the gender distribution of the patients in our study. Here, maximum patients (55%) were male and minimum patients (45%) were female. See the Figure 1 below-

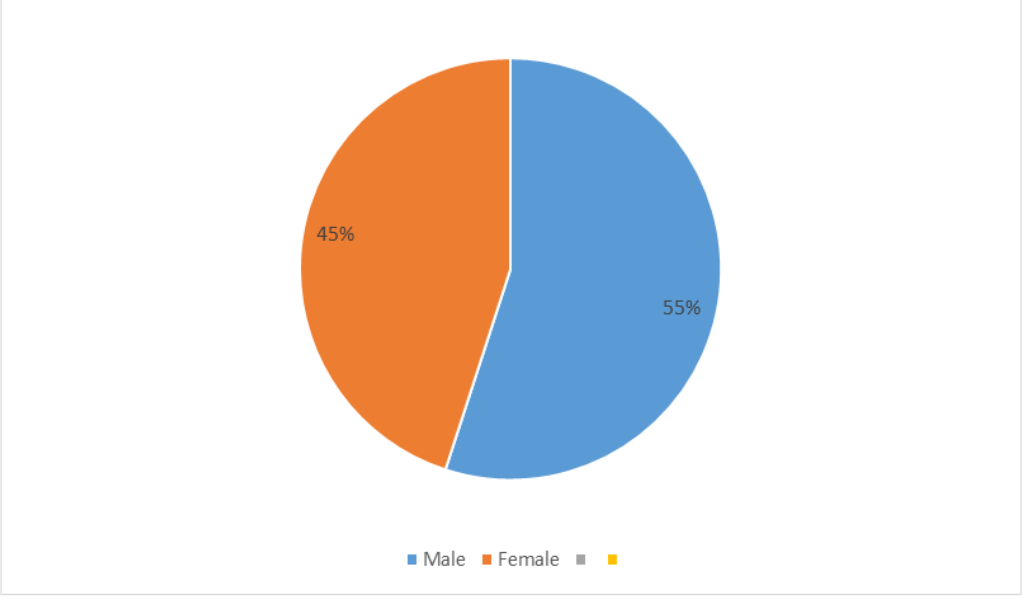

Figure 1: Gender distribution of the patients

Table 1 is showing the age distribution of the patients. In our study, maximum patients (19.6%) were between 30 to 39 years of age group. Minimum number of patients (13.2%) were between 20 to 29 years of age group. See the Table 1 below for detail information –

Table 1: Age distribution of the patients

Age (years)	Number of patients (n)	Total n (%)
<20 years	47	18.1%
20-29 years	35	13.2%
30-39 years	51	19.6%
40-49 years	48	18.4%
50-59 years	41	15.7%
≥60 years	38	14.7%
Total (n)	260	100%

Figure 2 is showing the diagnosis results of autoimmune blistering diseases among patients of our study. Here, maximum patients (75) had pemphigus vulgaris and minimum number of patients (15) had pemphigus foliaceus. See the detail informations below:

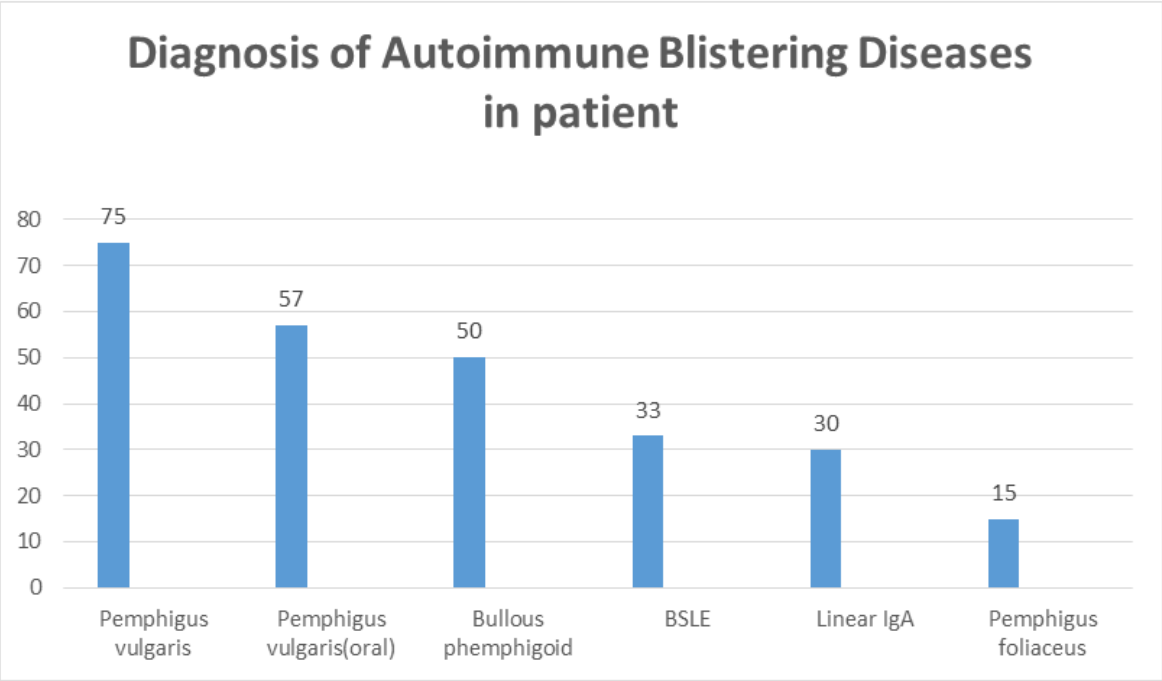

Figure 2: Diagnosis of Autoimmune Blistering Diseases in patient

Table 2 is showing the medication and side effects of treatment among the patients. Here, maximum patients were treated with steroids (51) and azathioprine (53). Minimum number of patients (10) were treated with cyclosporine. Side effects like (Cushing syndrome, Growth retardation, Osteoporosis) were observed in patients treated with steroids (6), Neutropenic sepsis (4) in Rituximab, Hemolytic anemia (3) in Dapsone and Nausea (4) in Azathioprine. See the detail informations in the Table 2 below:

Table 2: Medication and side effects of treatment

Medication	Number of Patients (n)	Side effects	Patients with side effects n (%)
Steroids	51	Cushing syndrome, Growth retardation, Osteoporosis	6
Rituximab	27	Neutropenic sepsis	4
Dapsone	33	Hemolytic anemia	3
Azathioprine	53	Nausea	4
Methotrexate	36	None	0
Mycophenolate mofetil	26	None	0
Colchicine	24	None	0
Cyclosporine	10	None	0

Figure 3 is showing the clinical status at last follow-up visit. Here, 141 patients had complete remission off therapy and 119 patients had partial remission on therapy. See the figure below-

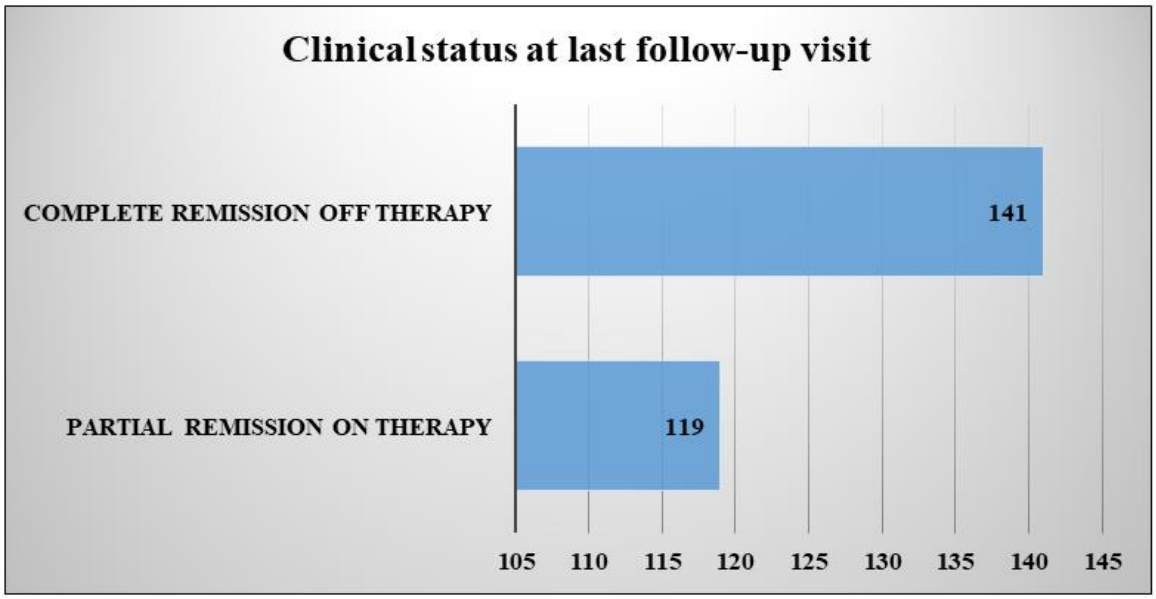

Figure 3: Clinical status at last follow-up visit

DISCUSSION

Since the prognosis and treatment options for autoimmune skin illnesses that blister and bleed substantially depend on the underlying disease process, accurate diagnosis is crucial. Diagnosis is made clinically. But the confirmatory diagnosis is done by biopsy and histopathology and Direct immunofluorescence technique. The lack of recent prospective therapy trials in this area makes the management of many disorders challenging. Cochrane reviews have provided an overview of the trials pertaining to BP and pemphigus [7]. The authors of a review on BP come to the conclusion that the use of topical steroids across a large region is well-established as a safe and effective treatment for this condition, and they advise that the initial prednisolone dose not go over 0.75 mg/kg/d. There haven't been enough therapeutic trials for pemphigus vulgaris and pemphigus foliaceus to make any recommendations on treatment [8].

The skin and mucous membranes are affected by the uncommon group of autoimmune blistering illnesses known as pemphigus.

The most prevalent subtype of the pemphigus group of illnesses is pemphigus vulgaris (PV). Pemphigus foliaceus, pemphigus vegetans, and pemphigus erythematosus are the less frequent clinical form [9] PV incidence has been estimated to range between 0.42 and 1.62 instances per 100,000 people, with Ashkenazi Jews and those of Mediterranean ancestry seeing higher incidences [10].

A subepidermal blistering condition known as linear IgA dermatosis (LAD), it can have a variety of different clinical manifestations.

It has been noted that females are more likely than males to contract the condition. In our study, pemphigus foliaceus affected 15 people, while pemphigus vulgaris affected 75 cases on average. A number of medications, including vancomycin, diclofenac, lithium carbonate, and glibenclamide, have been linked to LAD [11]. There has been a correlation with autoimmune disorders and cancers, including rheumatoid arthritis, ulcerative colitis, SLE, dermatomyositis, thyroid and esophageal cancer, and chronic lymphocytic leukemia, similar to other autoimmune blistering diseases. The blistering condition known as linear IgA dermatosis affects both the skin and the mucous membranes.

The current approach to treating pemphigus vulgaris has changed in light of mounting evidence of the drug's therapeutic advantages (PV). Oral corticosteroids and adjuvant immunosuppressive drugs like mycophenolate mofetil or azathioprine are frequently used as first-line therapy for PV. Plasmapheresis/immunoadsorption (IA), intravenous cyclophosphamide, intravenous immunoglobulin (IVIg), and rituximab are examples of second- or third-line, or "rescue," therapeutic options. The authors recommend first-line therapy with high-dose oral corticosteroids with the early addition of adjuvant steroid-sparing medications such mycophenolate mofetil in the therapeutic ladder developed by Strowd and colleagues [12]. However, recent research has shown that patients who receive adjuvant therapy

before receiving rituximab treatment had increased risks of relapse [11]. Increased disease duration prior to starting therapy was linked to failure to achieve complete remission in a retrospective study of 150 pemphigus patients who received a single cycle of rituximab [13]. A recent study found that patients with pemphigus may experience a lower risk of relapse by continuing conventional treatment at lower doses after establishing clinical control with rituximab [14].

In our study, the majority of patients (51) received steroid and azathioprine treatments (53). A minimum of ten patients received cyclosporine treatment. Patients receiving steroid treatment (6) reported side effects such as Cushing syndrome, growth retardation, osteoporosis, neutropenic sepsis (4) from Rituximab, hemolytic anemia (3) from Dapsone, and nausea (4) from Azathioprine. Rituximab and oral corticosteroid therapy are safe and effective when used as first-line treatments for pemphigus patients, according to additional research. Cho and colleagues describe the treatment of nine patients with moderate-to-severe pemphigus with systemic corticosteroids (1.0 mg/kg/d), 500 mg of rituximab administered by four weekly infusions, and weaning of corticosteroids by six months [15]. However, 8 out of 9 individuals experienced relapse, and these patients were given further doses of rituximab, azathioprine, or a combination of rituximab and corticosteroids [15]. Additionally, it has been proposed that rituximab could be used as a first-line treatment for patients for whom systemic corticosteroids are not appropriate.

In conclusion, the currently available research may imply that treating adult pemphigus patients with greater rituximab doses earlier on may favor better long-term clinical results. The fact that there were only a few patients in our study and they all belonged to the same ethnic group was one of its drawbacks. Additionally, there might have been selection bias because this was a cross-sectional study conducted in a clinic.

Treatment Outcome

Figure 4 showing treatment outcome of patients. 80% patients have excellent outcome, 10% have good and 8% have fair response. 2% of total patients are dropout.

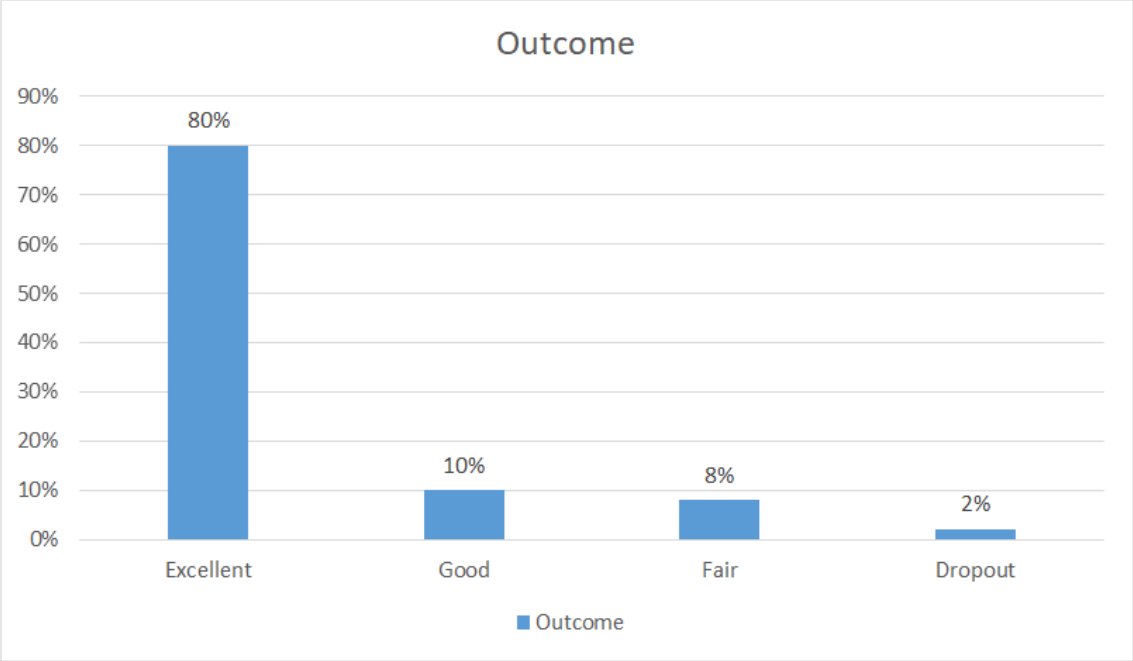

Figure 4: Treatment Outcome of patients

CONCLUSION

As the population ages and better diagnostic testing increases the likelihood of detection, more people will require treatment for autoimmune blistering skin diseases in the future. Rituximab, infliximab, leflunomide, doxycycline, omalizumab, and immunoadsorption are currently being explored in controlled prospective trials because specific and well-tolerated therapies are urgently needed. Given the similarities between the various illnesses, immunohistopathologic screening is crucial to confirm the diagnosis in addition to the clinical presentation, and repeat biopsies may be helpful in individuals with unusual disease histories. Prospective, controlled trials are still required to confirm the efficacy of the currently used therapies. Consequently, a comprehensive, national research is required.

Conflict of Interest: There is no potential conflict of interest relevant to this research.

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Patient Consent: This study obtained patient consent directly from the patient.

Author's Contributions

The author's contributions include manuscript preparation and editing. The manuscript has been prepared and approved by all the authors to be submitted and published.

REFERENCES

1. Murrell, D. F., Dick, S., Ahmed, A. R., Amagai, M., Barnadas, M. A., Borradori, L., ... & Werth, V. P. (2008). Consensus statement on definitions of disease, end points, and therapeutic response for pemphigus. *Journal of the American Academy of Dermatology*, *58*(6), 1043-1046.
2. Feliciani, C., Joly, P., Jonkman, M. F., Zambruno, G., Zillikens, D., Ioannides, D., ... & Borradori, L. (2015). Management of bullous pemphigoid: the European Dermatology Forum consensus in collaboration with the European Academy of Dermatology and Venereology. *British journal of dermatology*, *172*(4), 867-877. https://doi.org/10.1111/bjd.13717.
3. Hertl, M., Jedlickova, H., Karpati, S., Marinovic, B., Uzun, S. O. N. E. R., Yayli, S. A. V. A. Ş., ... & Jonkman, M. F. (2015). Pemphigus. S2 Guideline for diagnosis and treatment–guided by the European Dermatology Forum (EDF) in cooperation with the European Academy of Dermatology and Venereology (EADV). *Journal of the European Academy of Dermatology and Venereology*, *29*(3), 405-414.
4. Joly, P., Maho-Vaillant, M., Prost-Squarcioni, C., Hebert, V., Houivet, E., Calbo, S., ... & Musette, P. (2017). First-line rituximab combined with short-term prednisone versus prednisone alone for the treatment of pemphigus (Ritux 3): a prospective, multicentre, parallel-group, open-label randomised trial. *The Lancet*, *389*(10083), 2031-2040.
5. Lamberts, A., Euverman, H. I., Terra, J. B., Jonkman, M. F., & Horváth, B. (2018). Effectiveness and safety of rituximab in recalcitrant pemphigoid diseases. *Frontiers in immunology*, *9*, 248. https://doi. org/10.3389/fimmu.2018.00248.
6. Kridin, K. (2018). Emerging treatment options for the management of pemphigus vulgaris. *Therapeutics and clinical risk management*, 757-778.
7. Martin, L. K., Agero, A. L., Werth, V., Villanueva, E., Segall, J., & Murrell, D. F. (2009). Interventions for pemphigus vulgaris and pemphigus foliaceus. *Cochrane Database of Systematic Reviews*, (1), CD006263.
8. Kirtschig, G., Middleton, P., Bennett, C., Murrell, D. F., Wojnarowska, F., & Khumalo, N. P. (2010). Interventions for bullous pemphigoid. *Cochrane Database of Systematic Reviews*, (10), CD002292.
9. Ahmed, A. R., Graham, J., Jordon, R. E., & Provost, T. T. (1980). Pemphigus: current concepts. *Annals of Internal Medicine*, *92*(3), 396-405.
10. Nousari, H. C., & Anhalt, G. J. (1999). Pemphigus and bullous pemphigoid. *The Lancet*, *354*(9179), 667-672.
11. Scott, J. E., & Ahmed, A. R. (1998). The blistering diseases. *Medical clinics of north america*, *82*(6), 1239-1283.
12. Strowd, L. C., Taylor, S. L., Jorizzo, J. L., & Namazi, M. R. (2011). Therapeutic ladder for pemphigus vulgaris: emphasis on achieving complete remission. *Journal of the American Academy of Dermatology*, *64*(3), 490-494. https://doi.org/10.1016/j.jaad.2010.02. 052.
13. Amber, K. T., & Hertl, M. (2015). An assessment of treatment history and its association with clinical outcomes and relapse in 155 pemphigus patients with response to a single cycle of rituximab. *Journal of the European Academy of Dermatology and Venereology*, *29*(4), 777-782. https://doi.org/10. 1111/jdv.12678.
14. Keeley, J. M., Bevans, S. L., Jaleel, T., & Sami, N. (2019). Rituximab and low dose oral immune modulating treatment to maintain a sustained response in severe pemphigus patients. *Journal of Dermatological Treatment*, *30*(4), 340-345. https://doi.org/ 10.1080/09546634.2018.1510173.
15. Cho, Y. T., Lee, F. Y., Chu, C. Y., & Wang, L. F. (2014). First-line combination therapy with rituximab and corticosteroids is effective and safe for pemphigus. *Acta Dermato-Venereologica*, *94*(4), 472-473. https://doi.org/10.2340/00015555-1746

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