

# Clinicoepidemiological Features of 82 Cases of Bullous Pemphigoid in Tehran, Iran

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**Abstract-** Bullous Pemphigoid is a chronic immunobullous disease, characterized by subepidermal bulla on the skin and mucosa. The purpose of the present study was to investigate the clinicoepidemiological features of bullous pemphigoid in Iranian patients. In this retrospective descriptive study, we reviewed 82 bullous pemphigoid patients within 2014-2016. The mean age of the patients was 67.13 years (range between 25 and 97) including 32(39.1%) males and 50(60.9%) females. Mucosal involvement was positive in 33(40.2%) of the patients, and oral mucosa was most commonly involved. Head and neck area were involved in 43 (52.4%) of the patients. Clinical and epidemiological characteristics of bullous pemphigoid are different in different regions of the world.

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**Keywords:** Bullous pemphigoid; Immune bullous disease; Pemphigoid

## Introduction

Bullous pemphigoid is the most common form of pemphigoid diseases. These diseases are a group of well-defined autoimmune disorders that are characterized by autoantibodies against dermal-epidermal junction structural proteins leads to the separation of the epidermis and dermis.

Bullous pemphigoid mainly affects older people, with onset usually in the late 70s. Bullous pemphigoid rarely occurs in individuals younger than 50 years (1,2).

Bullous pemphigoid is clinically characterized with tense, clear, blisters and erythema, which frequently arise on the flexural aspects of the limbs and on the abdomen and can persist for several days. In almost all patients, lesions are severely pruritic. Mild oral lesions develop in 10-20% of patients, but other mucosal areas are rarely affected (3).

This survey was conducted to determine the epidemiological characteristics, clinical features and frequency of mucosal lesions, in patients with bullous pemphigoid who were referred to dermatology clinics at the Razi Hospital in Tehran from 2014 to 2016.

## Materials and Methods

This was a retrospective descriptive cross-sectional survey carried out in the Autoimmune Bullous Diseases Research Center of Razi Hospital, Tehran, Iran, from May 2014 to October 2016. The patient data presented in this study have not been previously published.

Diagnosis of the patients was confirmed with histology findings and linear deposition of IgG and C3 in Direct Immuno-fluorescence (DIF). The following clinical and histological data were chronicled from records of the patients; age and gender at the time of diagnosis, histological findings in the pathology report, DIF and ELISA report, anatomical location of the lesions, and involvement of mucosal surfaces.

## Statistical analysis

The SPSS version 20.0 software package was used in the statistical analysis. The descriptive values obtained in the study are presented as means±SD for quantitative variables and as frequencies for qualitative ones. For the comparison of frequencies, the chi-square test or Fisher's exact test was used and for the comparison of continuous variables, Mann-Whitney and Kruskal-Wallis test was applied in both groups.  $P < 0.05$  was considered

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statistically significant.

## Results

We reviewed the files of 98 patients with BP in Tehran, Iran. Only 82 patients' files entered the study due to incomplete files. The mean age of the patients was

67.13 years at the time of diagnosis (range between 25 and 97). The study group was composed of 32 (39.1%) males and 50 (60.9%) females. Thirty-nine (47.6%) were outpatient, and 43 (52.4%) were hospitalized.

Mucosal involvement was positive in 33 (40.2%) of the patients, and oral mucosa was the most common location (Table 1).

**Table 1. Frequency, percentage, and location of mucosal involvement in bullous pemphigoid patients**

The site of mucosal involvement	Frequency of involvement	Percentage of involvement (%)
Oral mucosa	29	35.4
Genital mucosa	8	9.8
Nasal mucosa	2	2.4
Perianal mucosa	1	1.2
Total	33	40.2

The most common locations for bullous pemphigoid lesions were anterior of the thighs and ventral surface of the arms. Head and neck area were involved in 43 (52.4%) of the patients. Bullous lesions lead to scar

formation and milia in 19 (23.2%) and 4 (4.9%) of patients, respectively. The comparison between bullous pemphigoid patients hospitalized or managed outpatient is demonstrated in table 2.

**Table 2. The comparison between BP patients with inpatient or outpatient management**

	Outpatient	Hospitalized	Total	P
Age	63.9	70.7	67.1	0.04
Male	16 (37.2%)	16 (41%)	32 (39%)	0.82
Female	27 (62.8%)	23 (59.0%)	50 (61.0)	
No millia	42 (97.7%)	36 (92.3%)	78 (95.1%)	0.27
With milia formation	1 (2.3%)	3 (7.7%)	4 (4.9%)	
No scar	29 (67.4%)	34 (87.2%)	63 (76.8%)	0.03
Scar formation	14 (32.6%)	5 (12.8%)	19 (23.2%)	
No mucosal involvement	26 (60.5%)	23 (59.0%)	49 (59.8%)	0.31
With mucosal involvement	17 (39.5%)	16 (41.0%)	33 (40.2%)	
No involvement in head and neck	23 (53.5%)	16 (41.0%)	39 (47.6%)	0.18
With involvement in head and neck	20 (46.5%)	23 (59.0%)	43 (52.4%)	

ELISA was performed in 49 of the patients. Anti BP-180 antibody was positive in 39 (79.6%), and anti-BP-230 was positive in 25 (51.0%) of the patients. The presence of these antibodies was not related to the anatomical location of the lesions ( $P=0.16$ ) and mucosal involvement ( $P=0.44$ ).

Direct Immuno-Fluorescence (DIF) for IgG and C3 was positive in 78 (95.1%) of the patients. Positive DIF had no relation with the anatomical location of the lesions or mucosal involvement ( $P$  for IgG=0.27 and for C3  $P=0.32$ )

## Discussion

Bullous Pemphigoid is a common immunobullous disease with a high rate of mortality and morbidity. In order to understand different aspects of this disease, it is essential to investigate clinical presentation in different populations. This study represents clinicoepidemiological characteristics of bullous pemphigoid among Iranian population from Tehran, Iran.

Although in most regions bullous pemphigoid is usually presented in seventh to ninth decade of life (4), the mean age at the time of diagnosis (67.13) in our patients was observed to be relatively lower than that reported in the literature ( $73.7-82.4\pm 7.4$  years) (5,6).

## Bullous pemphigoid

Similarly, in previous reports from Iran, Daneshpazhooh *et al.*, (7) and Esmaeli *et al.*, (8) reported a mean age of 59.4 and 65.0 years respectively. In a more recent report from Iran investigating immunobullous disease among elderly patients (over 60-year-old), the mean age of 77.6 years was reported (9). A study from south-western Iran also reported a mean age of 64.1 years (10). Younger age at the time of diagnosis in developing countries such as Iran may be due to the lower age of the elderly population in comparison to developed countries.

As in our study, bullous pemphigoid has been reported to be more common in females worldwide, except for China (11), Germany (2), and Tunisia (12), where a predominance of the male has been observed. Previous reports from Iran similarly reported female predominance (7-9).

In our patients, we observed a higher incidence of mucosal involvement (40.2%) than reports from other ethnicities (10-25%) (13-16). Nanda *et al.*, reported 37% of mucosal involvement in moderate to severe Bullous Pemphigoid patients from Kuwait. One reason which has been proposed in this report was higher incidence of mucosal involvement in more severe cutaneous lesions (17). However, as demonstrated in table 2 the only significant difference between bullous pemphigoid patients with mild to moderate disease and patients with moderate to severe disease mandating hospitalization were higher age in hospitalized patients. Mucosal involvement was not related to disease severity in our patients. Previous reports from Iran demonstrated lower incidence of mucosal involvement in bullous pemphigoid (between 11.1 and 31.1%) (9,18).

Another significant finding in our series was higher incidence of head and neck involvement (52.4%). In Esmaeli *et al.*, series 25.4% of patients showed head and neck involvement (8). Bullous pemphigoid typically affects flexural aspects of the limbs and the abdomen (3). Higher incidence of head and neck involvement may be due to genetic and environmental factors.

The important observations in our study were higher female predominance, higher incidence of mucosal involvement and higher incidence of head and neck involvement. These may provide evidence for a specific subtype of bullous pemphigoid in Asian populations. This may be due to environmental factors and genetic background of the patients. Further multi-centric studies are required to determine the difference between populations in relation to ethnic, genetic and environmental factors.

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