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Evidence Gap Analysis of the Burden of Illness and Treatment of Bullous Pemphigoid

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BACKGROUND

- Bullous pemphigoid (BP) is a chronic autoimmune blistering disease characterized by itch and/or tense bullae appearing on previously healthy skin.
- BP is the most common form of autoimmune blistering disease.[1,2] The size of the bullae typically varies from 1 cm to 3 cm, but they can be larger and can be confined to small areas or appear extensively throughout the whole body.[1,3,4]
- BP is most often located behind the knee, elbow crease, groin, inner thighs, axillae (flexor surfaces), and lower abdomen.[3,4] There is oral mucosal involvement in approximately 10% to 20% of BP cases, and up to 20% are nonbullous.[4,5]
- BP predominately effects older adults,[6] with mean age at onset ranging from 78 to 80 years.[7,8] BP can be triggered by certain medications.[4]

OBJECTIVE

- To identify evidence gaps in the literature on the burden of illness and treatment of BP to support the launch of efgartigimod to treat this rare disease.

METHODS

- A structured literature review was conducted from 25 October 2012 through 25 October 2022 in PubMed, Embase, and Cochrane using a predefined search strategy.
- Articles on disease description, epidemiology, humanistic and economic burden, treatment guidelines, and treatment patterns were included.

RESULTS

Epidemiology: Key Findings and Evidence Gaps

- The overall global incidence rate for BP was 34.2-41.9 per 1 million person-years (Figure 1).[2,9]
- The incidence (and prevalence) of BP has been increasing since 2003 based on studies in France, Germany, and the United Kingdom (UK).
- Incidence of BP increases with older age (Figure 3).[2]
- The global clinic-based prevalence was 0.79% and was based on 19 studies (11 from Asia, 3 from Europe, 3 from Africa, 1 from Oceania, and 1 from South America) (Figure 4).[2]
- Asia had the highest prevalence by region, followed by Africa (Figure 4).
- Prevalence data are limited, with no data identified for France, Germany, Italy, or Spain.
- Although data seem to suggest that the incidence of BP is increasing, it is likely that the true burden of BP is underestimated due to the poor index study design.[9]

Evidence Gaps in Clinical, Humanistic, and Economic Burden

- BP is associated with significant clinical burden and has a negative impact on HRQOL.
- The increase in the prevalence of hospitalization for BP in the US from 2002 through 2012 could be secondary to the numerous comorbid conditions, the aging US population, and significant racial or ethnic healthcare disparities for both hospitalization and inpatient mortality of patients with BP.[11]
- For patients with autoimmune bullous dermatoses, rituximab is a lower-cost treatment option because it reduces the number of associated resources and costs compared with traditional corticosteroids, immunosuppressive agents, and IVIG.[12]

	Key findings	Evidence gaps
Clinical burden	• BP follows a chronic-remitting course that can be self-limiting. • Partial or complete remission can occur at a median time of 6.7 months.[13] • Relapses occur at a median time of 15.9 months. • Patients with BP are prone to other comorbidities, such as diabetes, chronic kidney disease, end-stage renal disease, hypertension, and obstructive sleep apnea significantly associated with BP.[14]	• BP is correlated with increased mortality and multiple comorbid health conditions; however, the causal relationship between these health conditions is unclear. **Unmet needs** • Further confirmation and understanding are needed concerning the association between BP and malignancies and psychiatric disorders.[15,16]
Humanistic burden	• BP is associated with a negative impact on HRQOL.	• Very few studies were found that measure HRQOL specifically in patients with BP vs. bullous dermatoses in general.
HRQOL instruments	• A variety of QOL instruments have been used to evaluate HRQOL in BP, including the DLQI, GHQ, HADS, UCLA Loneliness Scale, BDI-II, Skindex-29, and SF-36. • QOL measures used in the phase 2/3 study (BALLAD) for BP include the DLQI, ABQOL, and EQ-5D-5L.	• Most of the available data come from generic dermatology-specific QOL measures (DLQI or Skindex-29) or generic depression, anxiety, and/or loneliness measures (HADS, BDI-II, GHQ, or UCLA Loneliness Scale). • No humanistic burden studies were found that used the EQ-5D-5L.
Economic burden	• No economic burden studies were found for direct costs specific to BP; only 1 study was found for inpatient burden.	• No studies that estimate the burden of BP specifically are available in the literature.

ABQOL = Autoimmune Bullous Disease Quality of Life; BDI-II = Beck Depression Inventory II; DLQI = Dermatology Life Quality Index; GHQ = General Health Questionnaire 28; HADS = Hospital Anxiety and Depression Scale; HRQOL = health-related quality of life; IVIG = intravenous immunoglobulin; QOL = quality of life; SF-36 = 36-item Short Form Health Survey; UCLA = University of California, Los Angeles.

Evidence Gaps in Guidelines and Treatment Patterns

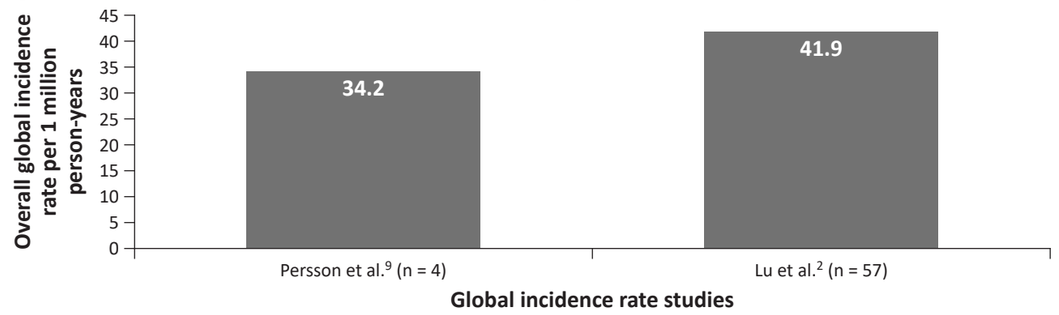
- BP management is generally divided into mild/localized and moderate/severe/extensive disease based on the number of blisters per day.
- Nevertheless, there is no universal agreement on this classification, as some experts consider body surface area involvement an important factor in guiding therapy.[17]
- Oral prednisone has been the standard treatment of BP for decades. Systemic corticosteroids achieve initial disease control within 1 to 4 weeks in 60% to 90% of patients, but they are associated with significant adverse events, especially in older adults.[18] Second-line treatment includes doxycycline, dapsone, methotrexate, azathioprine, mycophenolate mofetil, IVIG, rituximab, and omalizumab.
- There are currently no licensed treatments for BP, but several therapies are used off-label, either as monotherapy or in combination, or are generic.

Table 1. Treatment Patterns

Usage of Topical Corticosteroids		
Europe • Mild: 81.1% • Moderate: 55.3% • Severe: 54.3%	**US** • Mild: 47.1% • Moderate: 70.0% • Severe: 77.8%	**Asia** • Mild: 33.3% • Moderate: 77.8% • Severe: 100%
Reduction of the initial dose of oral corticosteroids in patients with comorbidities	• Patients with diabetes: 48.1% • Patients with cardiac insufficiency: 40.2% • Rarely changed BP treatment in patients with neurological disorders or neoplasia [19]	
High cost may be the main reason for infrequent use of topical corticosteroids in the US compared with Europe[20]	• US: over $400 per 60 g unit • Europe: €2.5 per 10 g unit or €15 for 60 g unit	
High proportion of patients with incident BP are treated with oral prednisolone in UK primary care[21]	**Unmet needs** • Corticosteroids have been the standard treatment for decades but are associated with significant adverse events, especially in older adults • Only 2 published HTA decisions on treatments for BP were identified	

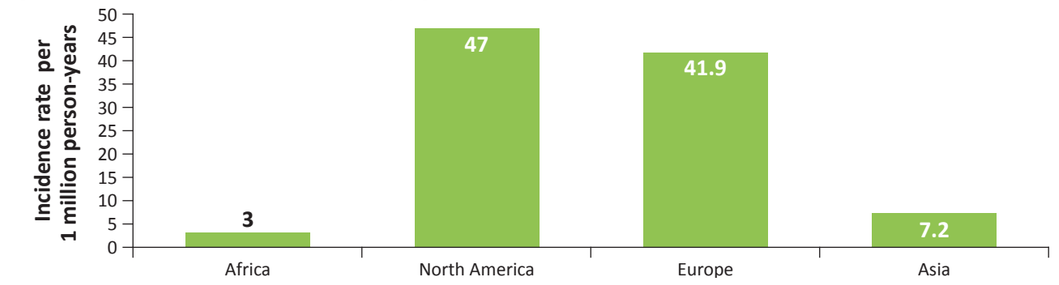
HTA = health technology assessment; US = United States.

Figure 1. Overall Global Incidence Rate for Bullous Pemphigoid



Incidence rates differed by region, with the highest rates in North America and Europe, followed by Asia and Africa (Figure 2).[2,9]

Figure 2. Incidence Rate of Bullous Pemphigoid



Note: Incidence rate and cumulative incidence are distinct terms. The incidence rate is the number of cases at a particular point in time (e.g., how quickly people are developing a disease), whereas cumulative incidence relates to the proportion of people who develop a disease during a specified period.[10]

Figure 3. Global Age-Specific Incidence

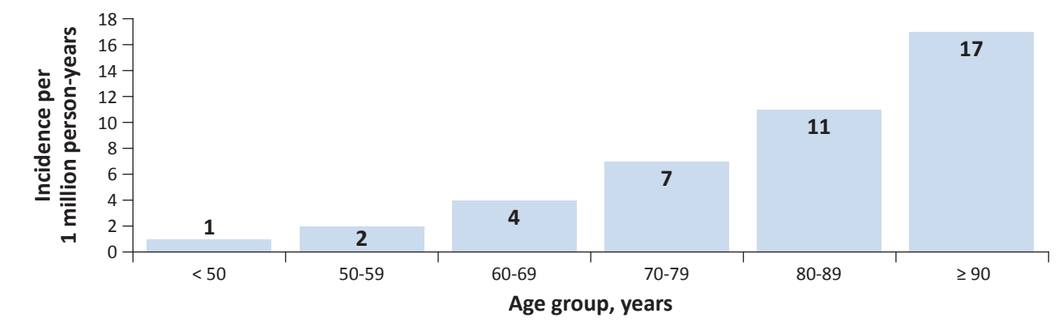
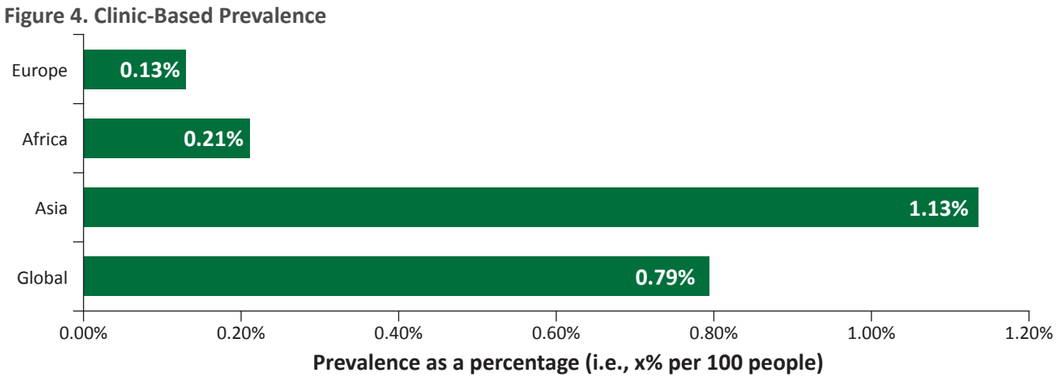


Figure 4. Clinic-Based Prevalence



CONCLUSIONS

Despite recent advancements in the understanding of BP pathogenesis, new treatments are still needed to control disease activity. There are currently no licensed treatments for BP.

REFERENCES

1. Deotto ML, et al. Exp Ther Med. 2022;23(1):50. **2.** Lu L, et al. J Cosmet Dermatol. 2022;21(10):4818-35. **3.** Miyamoto D, et al. An Bras Dermatol. 2019;94(2):133-46. **4.** Ruggiero A, et al. Clin Cosmet Investig Dermatol. 2022;15:661-73. **5.** Jones VA, et al. Panminerva Med. 2021;63(3):368-78. **6.** Hashimoto T, et al. J Am Acad Dermatol. 2020;83(1):53-62. **7.** van Beek N, et al. Dtsch Arztebl Int. 2021;118(24):413-20. **8.** Saniklidou AH, et al. Arch Dermatol Res. 2018;310(1):11-28. **9.** Persson MSM, et al. Br J Dermatol. 2022;186(3):414-25. **10.** Webb P, et al. Essential epidemiology: an introduction for students and health professionals: Cambridge University Press; 2016. **11.** Ren Z, et al. Br J Dermatol. 2017;176(1):87-99. **12.** Heelan K, et al. J Cutan Med Surg. 2015;19(3):274-82. **13.** Cole EF, et al. JID Innov. 2021 Dec;1(4):100050. **14.** Lee S, et al. Arch Dermatol Res. 2021;313(5):327-32. **15.** Huang IH, et al. JDDG: Journal der Deutschen Dermatologischen Gesellschaft. 2022;20(10):1305-12. **16.** Lucariello RJ, et al. Australas J Dermatol. 2018;59(4):253-60. **17.** Patel PM, et al. Am J Clin Dermatol. 2020;21(4):557-65. **18.** Oren-Shabtai M, et al. Drugs Aging. 2021;38(2):125-36. **19.** Guignant M, et al. JID Innov. 2022;2(4):100129. **20.** Joly P, et al. Ann Dermatol Venereol. 2022;149(2):79-80. **21.** Persson MSM, et al. Br J Gen Pract. 2021;71(713):E904-E11.

DISCLOSURES AND FUNDING

Arvin-Berod C, Vande Walle K, Verheesen P, and Stoykov I are employees of argenx. Gildea L and Copley-Merriman C are employees of RTI Health Solutions. argenx provided funding to RTI Health Solutions to conduct this study and was involved in reviewing this poster.

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Presented at: ISPOR Europe 2023; 12-15 November 2023; Copenhagen, Denmark