

# Describing The Real-World Burden of Demodex Blepharitis: a Multi-Centre Audit in a UK Public Specialist Eye Care Setting

HSD32

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## INTRODUCTION

- Blepharitis is a common inflammatory eyelid disease<sup>1</sup>
- Around **two-thirds** of cases are linked to *Demodex* mite overgrowth, termed **Demodex blepharitis (DB)**<sup>2</sup>
- DB shows a pathognomonic sign: **collarettes** at the base of eyelashes<sup>3</sup>
- DB can cause a wide range of eye symptoms but is **frequently missed or misdiagnosed**<sup>4</sup>
- Real-world data** on the clinical and patient burden are **limited**

## AIM

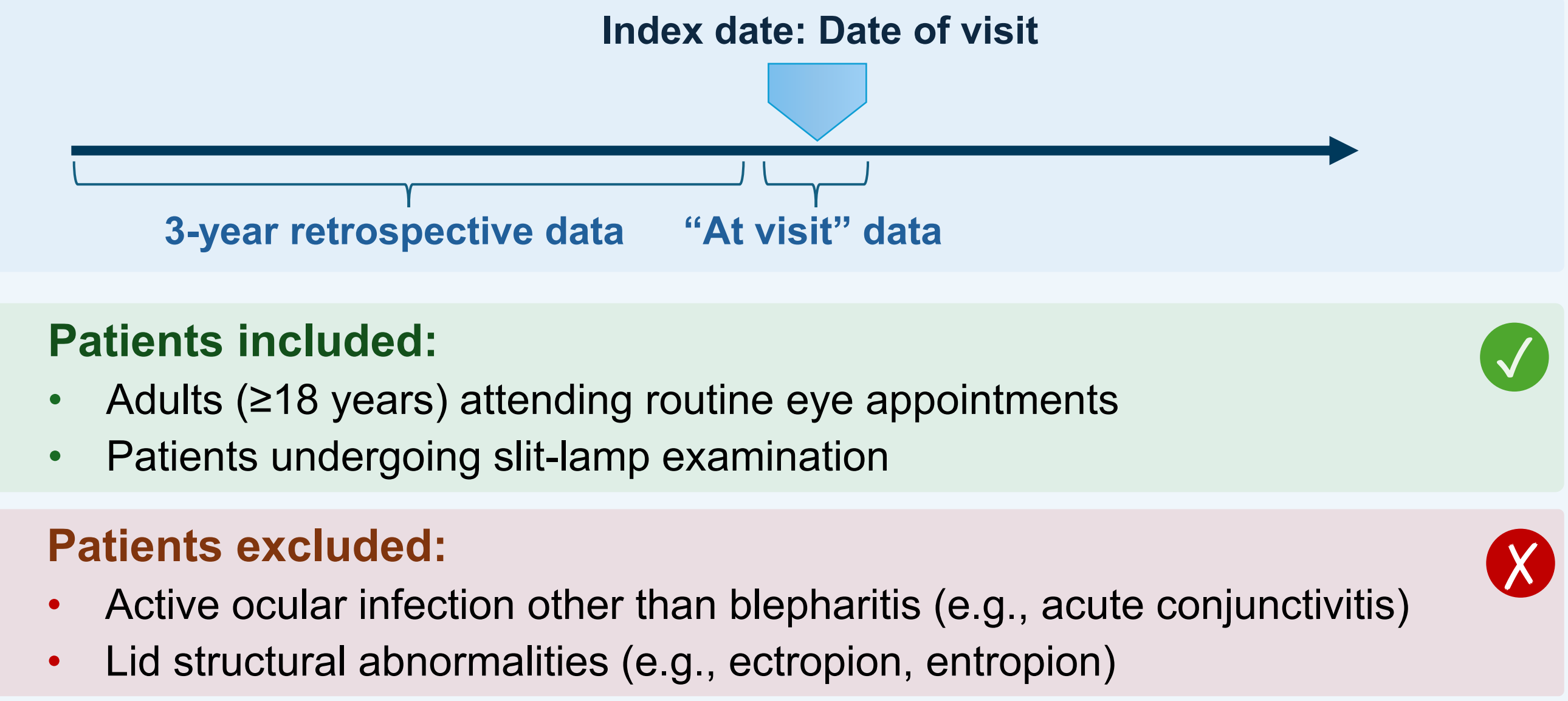
The aim of this audit was to identify the **proportion of DB** among all patients seen in a routine **public specialist eye care setting** and to describe the **burden of illness** in this cohort of DB patients.

## OBJECTIVES

- Estimate** the proportion of patients with DB among those patients seen in a routine public secondary-care setting
- Describe** patient demographics and disease characteristics
- Assess** current treatment patterns
- Evaluate** healthcare resource use

## METHOD

- Cross-sectional, retrospective audit across **5 NHS specialist eye centres** in the UK. **Design** (per patient):



## RESULTS

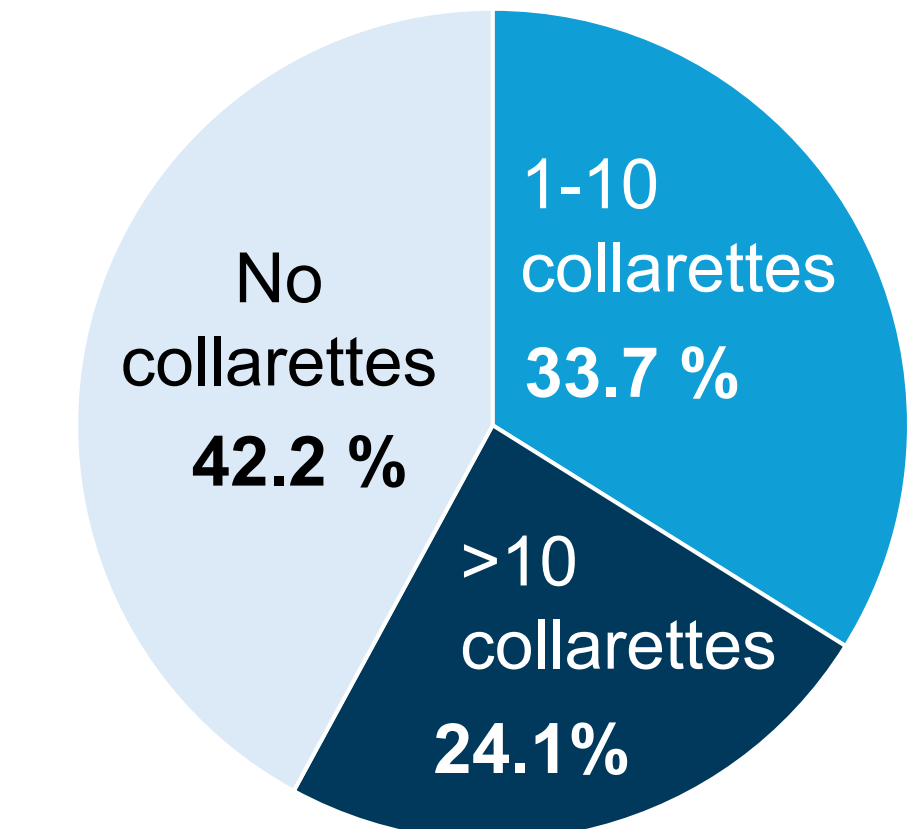
### Proportion of DB patients

493 patients were included (Figure 1). Of these, **more than half** (57.8%) had **at least 1 collarette** and were classified as having **DB**, and about **a quarter** (24.1%) had **>10 collarettes** and were classified as having **moderate-to-severe DB** (Figure 2).<sup>3,5,6</sup>

Figure 1. Patient demographics (N=493)

Demographic Characteristics		Total patients (N=493)	DB patients ≥1 collarettes (n=285)
Age (years), mean ± SD		59.8 +/- 19.6	65.2 +/- 17.7
Sex	Female, n (%)	250 (50.7%)	148 (51.9%)
Race / Ethnicity	White, n (%)	323 (65.5%)	201 (70.5%)
	Asian, n (%)	107 (21.7%)	48 (16.8%)
	Black, n (%)	25 (5.1%)	15 (5.3%)
	Other, n (%)	20 (4.1%)	7 (2.5%)
Mixed ethnic groups, n (%)		18 (3.7%)	14 (4.9%)

Figure 2. DB population (%) among all patients seen in a routine public secondary-care setting (N=493)



Patients were divided in groups:

- Non-DB:** no collarettes
- DB:** ≥1 collarette (collarette is a pathognomonic sign<sup>3</sup>). DB patients were further classified as<sup>5,6</sup>:
  - Mild DB:** 1-10 collarettes
  - Moderate-to-severe DB:** >10 collarettes

Figure 3. Proportion of DB patients who have an ocular comorbidity

Comorbidities	Proportion with DB, n/N* (%)
Glaucoma (N=35)	31/35 (88.6%)
Rosacea (N=61)	54/61 (88.5%)
MGD (N=292)	228/292 (78.1%)
Dry eye (N=333)	239/333 (71.8%)
Cataract (N=112)	80/112 (71.4%)

\*n = DB patients; N = patients with comorbidity

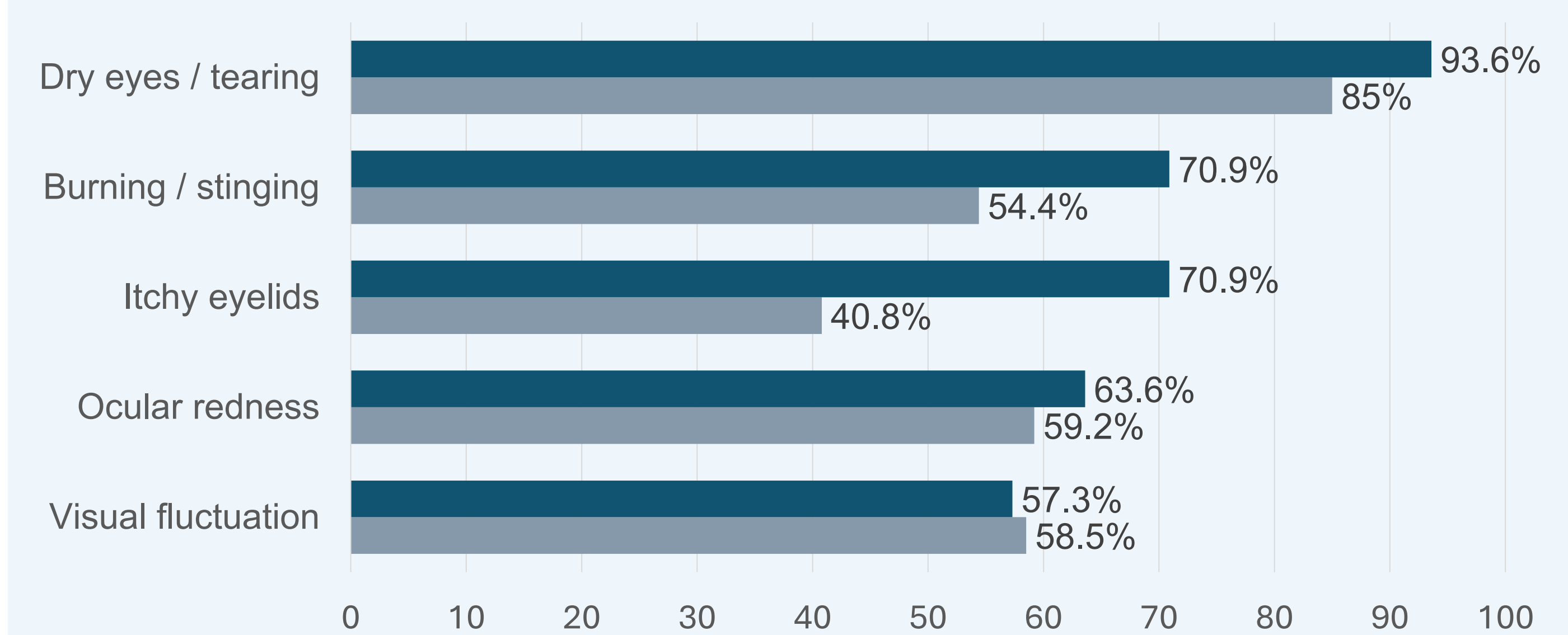
### Comorbidities

The proportion of **DB was higher in patients with common clinical conditions** including **glaucoma** (88.6%), **rosacea** (88.5%), **MGD** (78.1%) and **dry eye disease** (71.8%) (Figure 3).

### Symptoms in DB patients

DB patients had a high symptom burden that increased with the severity of DB; **90.2% (257/285) of DB patients reported at least one ocular symptom** and patients with **moderate/severe DB** were associated with a **>2.5-fold odds of a high symptom frequency** (95% CI, 1.3-4.8; p = 0.005). Common symptoms in mild DB and moderate-to-severe DB patients are presented in Figure 4.

Figure 4. Frequent symptoms<sup>†</sup> presented in DB patients (n=257)



<sup>†</sup>Note: Combined symptoms were recorded as one item by investigators; not post hoc.

### Treatments

DB patients were prescribed a wide range of treatments including **artificial tears** (84.0%), **lid hygiene products** (38.5%), **topical steroid drops** (38.5%) and **cyclosporin** (21.0%) (Figure 5). Patients with **moderate-to-severe DB** were **2.7 times more likely** to be prescribed **cyclosporin** than patients with mild DB (95% CI, 1.3-5.7; p = 0.009).

Figure 5. Treatments used by DB patients (n=257)

Treatments	DB (n=257)	Mild DB (n=147)	Mod#/Severe DB (n=110)
Artificial tears	216 (84.0%)	111 (75.5%)	105 (95.5%)
Other lid hygiene	99 (38.5%)	43 (29.3%)	57 (51.8%)
Topical steroid drops	99 (38.5%)	51 (34.7%)	48 (43.6%)
Cyclosporine	54 (21.0%)	22 (15.0%)	32 (29.1%)
Tee Trea Oil (TTO) wipes	29 (11.3%)	10 (6.8%)	19 (17.3%)
Oral tetracyclines or azithromycin	13 (5.1%)	5 (3.4%)	8 (7.3%)
Blephex	6 (2.3%)	1 (0.7%)	5 (4.5%)
Oral steroids	5 (1.9%)	1 (0.7%)	4 (3.6%)
Intense Pulsed Light (IPL)	4 (1.6%)	2 (1.4%)	2 (1.8%)
Topical antibiotics	3 (1.2%)	1 (0.7%)	2 (1.8%)
Oral ivermectin	1 (0.4%)	1 (0.7%)	NA

<sup>‡</sup>Mod = Moderate

### Healthcare Resource Utilization (HCRU)

Among DB outpatients (n=189<sup>§</sup>), there were **1,123 visits**. Patients with **moderate-to-severe DB** had **1.5 more visits** per patient-year than those with **mild DB** (5.7 ± 11.1 vs 4.2 ± 6.6, mean PPPY ± SD); this difference was **not statistically significant** (t-test, p = 0.277)

<sup>§</sup>Note: Patients whose visit reason was non-surgical with ≥1 visit were included in this analyses however, all-cause visits reported. <sup>¶</sup>PPPY = per patient per year adjusted for months symptomatic over the prior 36 months

## CONCLUSIONS

- To our knowledge this is the **first audit describing the burden** of Demodex blepharitis in **UK public specialist eye care setting**
- 57.8% of patients** attending a routine eye appointment were defined as having DB, which is **consistent with previous research**,<sup>3,7</sup> and further demonstrates that DB is common and likely **underdiagnosed** among patients seeking care
- The proportion of **DB was higher in patients with ocular conditions** suggesting DB symptoms could be **misattributed to other ocular conditions**
- DB patients had a **high unresolved symptom burden** while receiving **multiple non-Demodex-specific treatments** indicating a large burden of illness and the **need for a treatment that targets** the underlying cause of DB
- Compared with the ~2.65 benchmark<sup>8</sup>, **DB PPPY outpatient visits were ~1.6-2.2× higher for all-cause visits**
- Findings highlight a **significant unmet need for targeted DB management**

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