Adult gonococcal eye disease; understanding the epidemiology, clinical and microbial characteristics

Milligan A[1,2], Yung M[2], Cole M[2], Pitt-Kendall R[3], Doumith M[3], Alexander S[3], Larkin DFP[1], Fifer H[2]

[1] External & Emergency Departments, Moorfields Eye Hospital, London, UK.
[2] Blood Safety, Hepatitis, STI & HIV Division, UK Health Security Agency, London, UK.
[3] STI Reference Laboratory, UK Health Security Agency, London, UK.

UK Health Security Agency

Moorfields Eye Hospital NHS Foundation Trust



Introduction

In 2023 in England, 85,223 cases of gonorrhoea were diagnosed, the highest number since records began.[1] An escalation in gonococcal keratoconjunctivitis (GKC) is a concern due to the potentially devastating visual complications. *Neisseria gonorrhoeae* can cause an aggressive keratitis leading to corneal thinning, perforation and blindness. This increase coincides with a major public health concern; *Neisseria gonorrhoeae* is evolving high levels of antimicrobial resistance, including to ceftriaxone, the last available option for empiric therapy.[2] The incidence and epidemiology of GKC in England is unknown. We initiated a novel surveillance system to understand the clinical and molecular epidemiology of GKC in London, including antimicrobial susceptibility.

Methods

- Pan-London partnership between 8 ophthalmologists across 20 hospitals began in January 2024.
- Clinical information on GKC cases were reported to UKHSA through a secure online questionnaire.
- Isolates referred to UKHSA for antimicrobial susceptibility testing and whole-genome sequencing (WGS).

Results

Figure 1. Age – gender distribution of cases of GKC

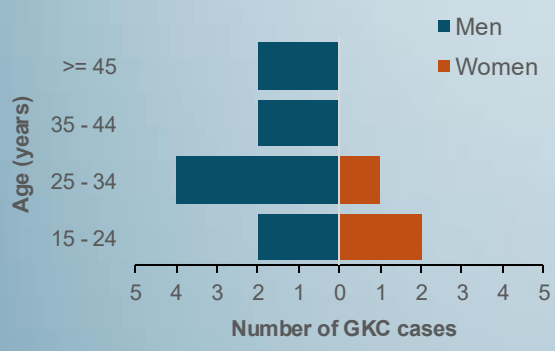
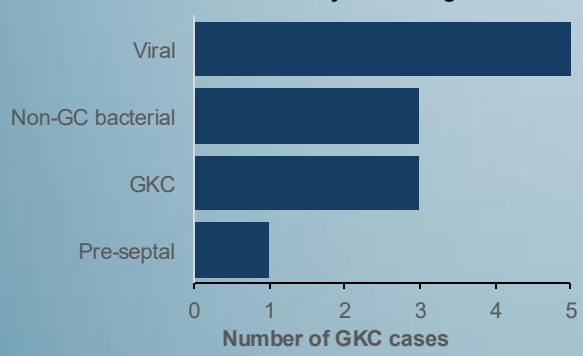


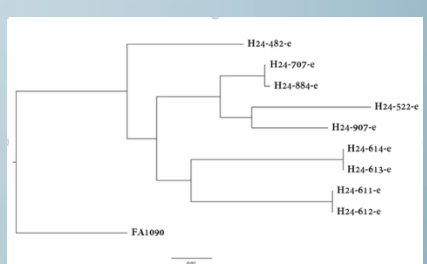
Figure 2. Number of cases of GKC by initial diagnosis



- In 2024, 13 cases of GKC were reported; 10 males, 3 females (figure 1).
- The median age was 27 (range 18-51).
- The majority (10/12, 83%) did not have classical hyperpurulent conjunctival discharge on initial presentation, leading to incorrect initial diagnoses (10/13, 77%) and a delay in treatment (figure 2).
- When the correct diagnosis was made all received 1g systemic ceftriaxone.
- All gonococcal isolates were ceftriaxone susceptible but quinolone resistant.
- Topical treatment varied.

- Isolates (n=9), from 6 cases were genetically distinct between patients, although two isolates differed by only 110 single nucleotide polymorphisms (figure 3).
- No single strain was associated with GKC

Figure 3. WGS tree of GKC isolates (FA1090 reference control)



Discussion

- Clinicians must be aware of the possible increased incidence of GKC and atypical presentation; notably without hyperpurulent discharge.
- Where suspected urgent eye swabs (NAAT and culture) are essential.
- Urgent referral to ophthalmology is required.
- Due to high levels of resistance, topical quinolones (e.g. moxifloxacin, levofloxacin) should not be used.
- This work promotes collaborative characterisation of GKC, informing treatment guidelines and a targeted public health response.

Improving Surveillance

- Sexual Health clinicians should report any ocular cases via GUMCAD

2025 BASHH National Guideline for the Management of Infection with *Neisseria gonorrhoeae:*

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