Five-year review of ocular Neisseria gonorrhoeae infections presenting to ophthalmology departments in Greater Glasgow & Clyde, Scotland

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Introduction

The sexually transmitted infection *Neisseria gonorrhoeae (NG)* is well known to cause ocular infection with potentially sight threatening consequences, with traditional teaching informing us that it can cause corneal perforation within 48 hours.(1,2)

As gonococcal infections in Scotland and the wider UK continue to increase (3,4), we wanted to review the number and clinical course of recent ocular gonococcal cases presenting to ophthalmology departments in NHS Greater Glasgow and Clyde.

Methods

A 5 year retrospective review of adult ocular gonococcal cases, where the diagnosis of *Neisseria gonorrhoeae* was made on microbiological culture, was undertaken. Samples taken between June 2015 and May 2020 were analysed. Demographic information and details of the clinical course were then retrieved from electronic patient records.

Results

Fifteen cases were identified (80% male). Average age was 26yrs (range 17-42; median 24). The numbers of cases of ocular gonococcal infection per 12-month period ranged from 0 to 6 with an overall upward trend (Figure 1).

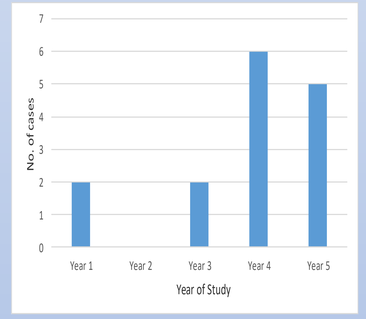


Figure 1. Numbers of cases per year over the five year study period.

Case	Year of swab	Age	Sex	Systemic treatments received (overall)	Systemic treatment given by Ophthalmology?	Time from presentation to systemic treatment (days)	Attended Sexual Health?	Treatment initiated or changed by Sexual Health?	Concurrent STIs
1	2015	36	F	Unknown as DNA	Unknown as DNA	N/A as DNA	Unknown as DNA	N/A as DNA	Unknown as DNA
2	2017	18	F	IV cefotaxime Oral azithromycin	Yes	0	No	N/A as DNA	Unknown as DNA
3	2017	23	M	IM ceftriaxone	Yes	2	Yes	No	Tested - none detected
4	2018	26	M	IM ceftriaxone Oral azithromycin	No	23	Yes	Initiated	GC throat
5	2018	42	M	IV ceftriaxone IV clindamycin	Yes	0	No	N/A as DNA	Unknown as DNA
6	2018	17	F	IV ceftriaxone Oral azithromycin	Yes	1	No	N/A as DNA	Unknown as DNA
7	2018	24	M	IV ceftriaxone IV flucloxacillin	Yes	0	Yes	No	Syphilis
8	2019	21	M	IV ceftriaxone Oral ciprofloxacin	Yes	2	No	N/A as DNA	Unknown as DNA
9	2019	33	M	IV ceftriaxone IV clindamycin Oral azithromycin Oral ciprofloxacin	Yes	1	Yes	No	Tested -none detected
10	2019	28	M	IV ceftriaxone	Yes	1	Yes	No	Tested - none detected
11	2019	18	F	Oral co-amoxiclav IM ceftriaxone	Yes	1	Yes	Changed	Tested - none detected
12	2019	36	M	IM ceftriaxone	Yes	0	No	No	Unknown as DNA
13	2019	18	M	IM ceftriaxone	No	13	Yes	Initiated	Tested - none detected
14	2019	20	M	Oral ciprofloxacin	Yes	0	No	N/A as DNA	Unknown as DNA
15	2020	29	M	Oral co-amoxiclav	Yes	0	No	N/A as DNA	Unknown as DNA

Table 1. Table of patient demographics and clinical details.



Figure 2. Patient photographs showing: A Purulent conjunctivitis; B Haemorrhagic conjunctivitis; C Limbal infiltration

Results

The most common presenting features included purulent discharge (14/15; 93%), haemorrhagic conjunctivitis (10/15; 67%) and pre-septal cellulitis (9/15; 60%). Corneal involvement was documented in 5 (33%), with marginal ulceration in 1 (7%) but none had corneal perforation. See figure 2.

The most common systemic treatment was IV ceftriaxone, alone or in combination with another antibiotic (6/15; 40%), followed by IM ceftriaxone, alone +/- another antibiotic (5/15; 33%). Median time from presentation to treatment was 1 day (0-23). See table 1 for details.

All patients were referred or recommended to attend sexual health services. Seven patients (47%) attended and received complete STI testing and contact tracing: 3 patients had systemic treatment initiated or changed at this visit and 1 patient had concurrent syphilis identified.

Conclusions

This series confirms purulent conjunctivitis and cellulitis as the main presenting features of ocular gonococcal infection requiring hospital review. Early identification with appropriate systemic antibiotic treatment avoided corneal melting in this cohort. As concurrent STIs were identified and/or treatments changed in 4/7 (57%) following sexual health review, we recommend a shared care approach between ophthalmology, microbiology and sexual health services to effectively address all management issues.

References

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