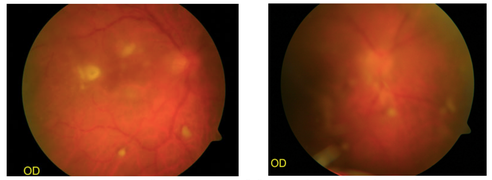
Ophthalmic examination in patients with candidaemia: is it necessary?

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INTRODUCTION & AIM

- Ocular candidiasis (fungal infection affecting the eye) has previously been documented in 16% of those with candidaemia.
- Visual outcomes of ocular candidiasis are poor, and diagnosis should be made before patients are symptomatic.
- Infectious Diseases Society of America (IDSA) advise dilated fundoscopy be performed in **all** non-neutropenic patients within the first week of candidaemia diagnosis.

This audit aims to assess whether such international guidance is being adhered to in our unit, with the intention of developing collaborative guidelines between ophthalmology and microbiology for appropriate referral and assessment of future patients.



(Left) Early manifestation of fungal endophthalmitis. Multifocal retinitis is visible, as well as inflammatory exudates in the vitreous
(Right) Endogenous fungal endophthalmitis one week later

METHODS

- Retrospective review of all patients with candida positive blood cultures at Worcestershire Acute Hospitals NHS Trust between 2014 - 2019.
- Data was collected regarding microbiological documentation of the necessity for ophthalmic review, whether ophthalmology review took place and the outcome of examination.

RESULTS

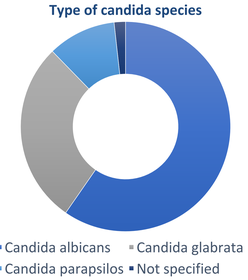
1. Demographics

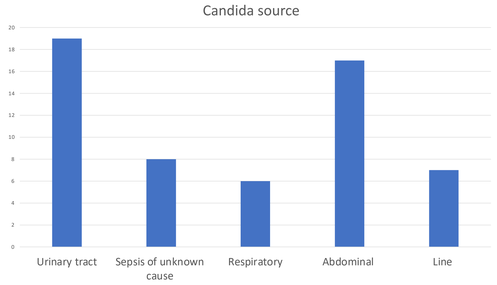
Out of 68 positive blood cultures identified, 57 cases were analysed. The table below shows the demographic of this group.

- **Median age 73 years (range 19 – 89 years)**
- 34 (60%) male
- 20 (35%) diabetic
- 21 (37%) had an ITU admission
- 3 (5%) neutropenic
- 23 (40%) died during the in-patient episode
- 42 (74%) deceased by the end of the audit

2. Pathogen and likely source

The figures below demonstrate the types of candida species identified and their likely sources respectively.





3. Parent team responsible

Most patients were cared for by general medicine. Patients were also under the care of general surgery, cardiology, ITU, haematology, urology and gastroenterology.

4. Microbiological documentation of the necessity for ophthalmic review

- Microbiologists recommended an ophthalmic review in 39/57 cases
- 36 of these 39 cases had an ophthalmic review requested
- 33/36 patients had an ophthalmology review

68%
- Microbiologists recommended review by an ophthalmologist (39/57)

8%
- Microbiology recommendation for ophthalmology review not followed (3/39)

92%
- Cases receiving full ophthalmology review and assessment (incl. dilated examination) (33/36)
- 3 cases did not have an ophthalmic assessment
- 16/33 had assessment within 48 hours

5. Ophthalmic examination findings

- **0%** were found to have any ocular manifestations of candidaemia
- Incidental findings include dry/wet AMD, cataract and lower lid ectropion

CONCLUSION

- This audit showed microbiology recommendations for ophthalmic review to be inconsistent.
- If referred to ophthalmology, the majority were assessed within a reasonable time frame.

What our audit adds:

1. Prevalence of ocular candidiasis is low (0%) over the 5 years studied

2. Routine ophthalmic examination of *all* non-neutropenic patients with candidaemia is not indicated

New guidance from the *Royal College of Ophthalmologists* published in 2020 recommends:

- **Routine** ophthalmic screening of all culture positive patients is **not** indicated due to **low prevalence**
- Screening should be performed on a 'case by case' basis

OUTCOMES

Presentation of this audit to the Ophthalmology & Microbiology department resulted in the following changes to trust guidelines:

1. Routine ophthalmic review of patients with a candida positive blood culture is **no longer necessary** across the Worcestershire Acute Hospitals NHS Trust.

2. Microbiologists will liaise with ward teams to refer patients with a positive candida culture on a case-by-case basis to Ophthalmology.

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