

# Ophthalmic examination in patients with candidaemia: is it necessary?

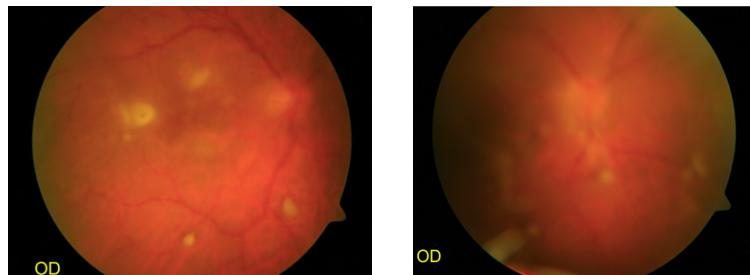
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## Introduction and Aim

- 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) Demonstrates early manifestation of fungal endophthalmitis. Multifocal retinitis is visible, as well as inflammatory exudates in the vitreous  
(Right) One week later

## Methods

- Retrospective review of all patients with candida positive blood cultures at Worcestershire Acute NHS Hospitals 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

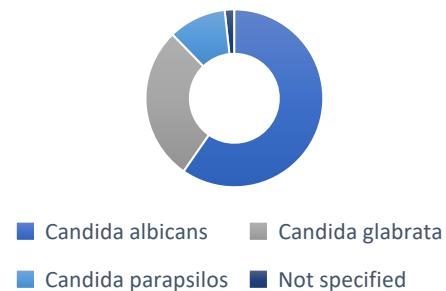
Out of 68 positive blood cultures identified, 57 cases were analysed. The table below shows the demographic of this group.

- **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

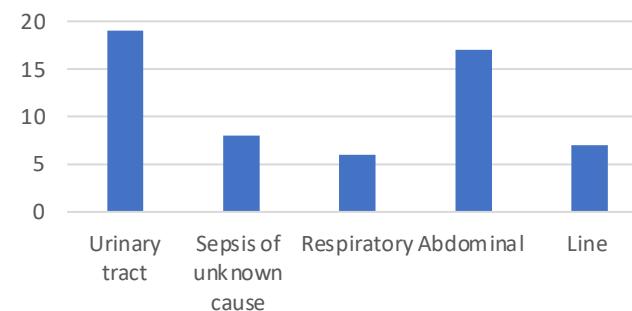
### 2. Pathogen and likely source

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

#### Type of candida species



#### Candida source

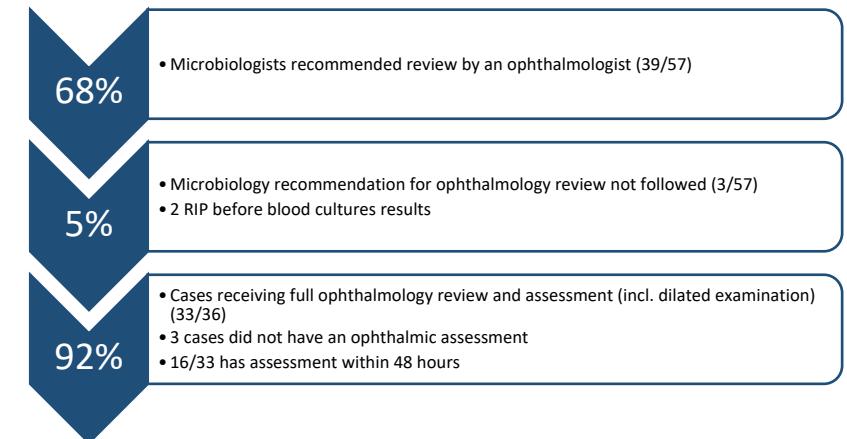


### 3. Parent team responsible

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



### 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

### 6. Documentation

- There was poor documentation in the majority of the records examined in this audit
- In 10/36 cases, there was no documentation found of the ophthalmic referral request
- There was uncertainty regarding length time between ophthalmic referral and review in 11/33 cases due to lack of documentation

## 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 may not be indicated

#### References

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2. Cornely OA, Bassetti M, Calandra T, et al. ESCMID\* guideline for the diagnosis and management of candida diseases 2012: non-neutropenic adult patients. Clin Microbiol Infect 2012;18:19-37
3. Oude Lashof AM, Rothova A, Sobel JD, et al. Ocular manifestations of candidemia. Clin Infect Dis 2011;53:262-268.
4. Wilczynski M, Wilczynski O et al. Bilateral endogenous fungal endophthalmitis. 2013 International Ophthalmology, 34(2), pp.321-325.

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