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Letter to the Editor

The controversial drive for intervention with ophthalmologic screening for *Candida* bloodstream infections



We read the study by [Shin et al. \(2020\)](#) with concern regarding endogenous *Candida* endophthalmitis (ECE). They report high ECE incidence (12.9%) among ophthalmologically examined patients with candidaemia, of which nearly half (41.4%) were subjected to intravitreal injection $\pm$ vitreous aspiration, and/or vitrectomy, despite symptoms being absent in most (65%). They conclude: 'Early active screening and treatment' of ophthalmic candidaemia complications is needed ([Shin et al., 2020](#)). We believe that their data do not support this recommendation.

The authors do not define ECE, treatment indications or treatment failure criteria. They include cases without vitreous extension as ECE, falsely doubling the true incidence, as previously seen ([Breazzano et al., 2019](#)). This discrepancy is critical, since distinguishing between true endophthalmitis (always involving vitreous) and less serious disease has management implications ([Breazzano et al., 2019](#); [Day et al., 2019](#); [Donahue et al., 1994](#); [Pappas et al., 2016](#)). Since 19% of ICU patients without candidaemia can exhibit indistinguishable ocular findings, it is essential to include control groups in these studies ([Donahue et al., 1994](#); [Rodríguez-Adrián et al., 2003](#)). The proportion of vitreous involvement among patients receiving invasive intervention is not provided. As six (20.7%) did not improve, it is unclear if these patients were subjected to unnecessary intervention, given an inaccurate diagnosis in half and no *Candida* growth from vitreous. At best, these patients had true endophthalmitis with severe disease, which was refractory to invasive intervention regardless of screening. At worst, these cases were not true endophthalmitis and subject to iatrogenic complications from an intervention that may not have been necessary. Iatrogenic complications are not infrequent and occasionally have devastating consequences ([McCannel et al., 2003](#)).

Information is not provided regarding central catheter removal or timing of systemic antifungal therapy following candidaemia diagnosis; both are known to influence endophthalmitis outcomes and mortality ([Breazzano et al., 2019](#); [Pappas et al., 2016](#); [Cornely et al., 2012](#); [Martínez-Vázquez et al., 1998](#)). Early screening and invasive ophthalmologic interventions have not been demonstrated to improve outcomes ([Breazzano et al., 2019](#); [Vena et al., 2017](#)). These recommendations are established by the Infectious Diseases Society of America (IDSA) ([Pappas et al., 2016](#)), based upon evidence from a small case series ([Martínez-Vázquez et al., 1998](#)), although many cases may be effectively managed without invasive approaches ([Breazzano et al., 2019](#); [Cornely et al., 2012](#)). A comparison of strategies is not provided, possibly because 31% of outcome data for ECE patients are missing ([Shin et al., 2020](#)). Conclusions regarding outcomes are also limited by the large

proportion of unscreened patients (70.6%), identified by these authors as an important source of selection bias ([Shin et al., 2020](#)).

Although the authors suggest that their findings support the IDSA guidelines ([Pappas et al., 2016](#)), the study does not provide data that asymptomatic patients benefitted from screening or that invasive ophthalmologic procedures resulting from screening improved outcomes. In conclusion, the recommendation by [Shin et al. \(2020\)](#) to continue universal ophthalmologic screening for candidaemia should be tempered, as it is not supported by the data and may further drive invasive procedures leading to harm.

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