Background. Increased incidence of Candida glabrata (CG) infection is a growing concern in recent years due to the higher rates of fluconazole resistance associated with C. glabrata. This study aimed to create a risk predictive model for C. glabrata in patients with candidemia.

Methods. Demographic data, risk factors, laboratory parameters, and outcomes were retrospectively collected on all cases of candidemia occurring at a large tertiary referral hospital between January 2002 and January 2015. Between-group differences were compared using 1 square tests. A risk predictive model was built using multivariate logistic regression.

Results. Of 1,913 subjects with candidemia, 398 (21%) had C. glabrata isolated. Those with C. glabrata were older (mean [SD] 61 [23] vs. 58 [23] years; P < 0.001), male more often female (23 [58%] vs. 681 [45%]; P < 0.001). On univariate analysis, age (OR 1.01 [95% CI 1.01,1.02]), gender (0.6 [0.5, 0.7]), history of rectal cancer (2.0 [1.2, 3.5]), other GI malignancy (3.0 [1.5, 6.2]), breast cancer (1.8 [1.1, 3.0]), enteral and parenteral feeding (1.9 [1.2, 3.2]), bowel resection (3.0 [1.4, 6.2]), temperature (0.9 [0.8, 1.1]), recent fluconazole use (2.0 [1.4, 2.9]), and The presence of urinary catheter (2.3 [1.4, 3.6]), central line (1.4 [1.1, 1.7) or ventilator (2.2 [1.3, 3.8]) were all associated with C. glabrata infection (P < 0.05) and included in the multivariate model. Age, gender, history of rectal malignancy, other GI malignancies, use of enteral or parenteral feeding and recent fluconazole use remained significant (effect size 1.2 [95% CI 1.1, 1.3] 1.8 [1.4, 2.3]; 2.0 [1.3, 3.6]; 3.0 [1.3, 6.9]; 1.9 [1.0, 3.3]; 2.0 [1.3, 3.0], respectively). The final model had a c-statistic of 0.66 [95% CI 0.63–0.69]). Ninety-day mortality in the C. glabrata group was not significantly different from the non-C. glabrata group (40% [158/398] vs. 42.5% (64/1515).

Conclusion. Underlying bowel pathology was more commonly associated with C. glabrata candidemia than with other candida species. Further exploration of the direct association between C. glabrata and GI malignancy and indirect effects of prior surgery or antifungal use on risk of C. glabrata candidemia are required. Interestingly, mortality did not differ between groups with glabrata and non-glabrata candida bloodstream infections. This may reflect increasing empiric use of echinocandin therapy.

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