

Higher glycosylated hemoglobin (A1c) levels are associated with increased mortality from *Cryptococcus* infection

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BACKGROUND

Cryptococcus is an opportunistic fungus and the most common cause of fungal meningitis.

Diabetes mellitus is a well-established risk factor for the development of bacterial infections, however, its role in the occurrence of Cryptococcosis is unknown.

The aim of the study was to determine whether diabetes and A1c levels were independent risk factors for infection and mortality in *Cryptococcus* infection.

METHODS

A retrospective hospital-based case-control study matched by age and gender (96 cases and 125 controls) was performed in patients tested for *Cryptococcus* infection at University of Colorado Hospital from 2001-2019 (n=221).

Data was extracted through RedCap. A multivariable logistic regression model was used to identify predictors of infection and mortality.

Adjusted for gender, age and case/control; for every 1-point increase in A1c levels, the odds of mortality increased by 40%

Figure 1.

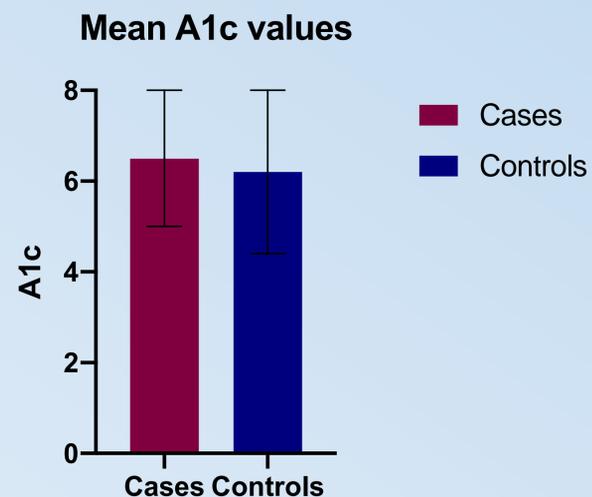
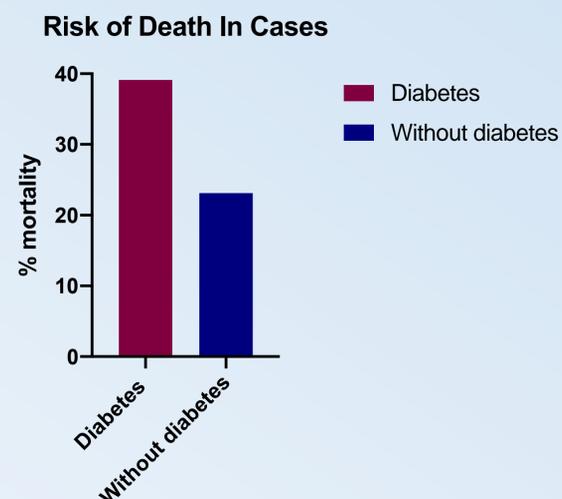


Figure 2.



RESULTS

- Meningitis made up almost half the cases and pulmonary infections about a third
- Diabetes was the only known risk factor in 6 cases (6.3%) and accompanied additional risk factor in 18 cases (18.8%)
- Other risk factors included HIV, steroid use, malignancy, solid organ transplant recipients, and cirrhosis.
- **A1c values did not differ significantly from cases and controls (figure 1).**
- **Among cases, the risk of death was higher for patients with diabetes, although it was not significant (39.1% vs 23.1%, p= 0.137) (figure 2).**

CONCLUSION

Diabetes mellitus alone is an uncommon risk factor for acquiring *Cryptococcus* infection.

However, uncontrolled diabetes in Cryptococcosis may worsen outcomes from infection, including increased mortality.

Glucose control interventions may improve clinical outcomes in patients with cryptococcal infection.