

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

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BACKGROUND

Cryptococcus is an opportunistic fungus that causes meningitis, pulmonary, and dermatologic infections

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.

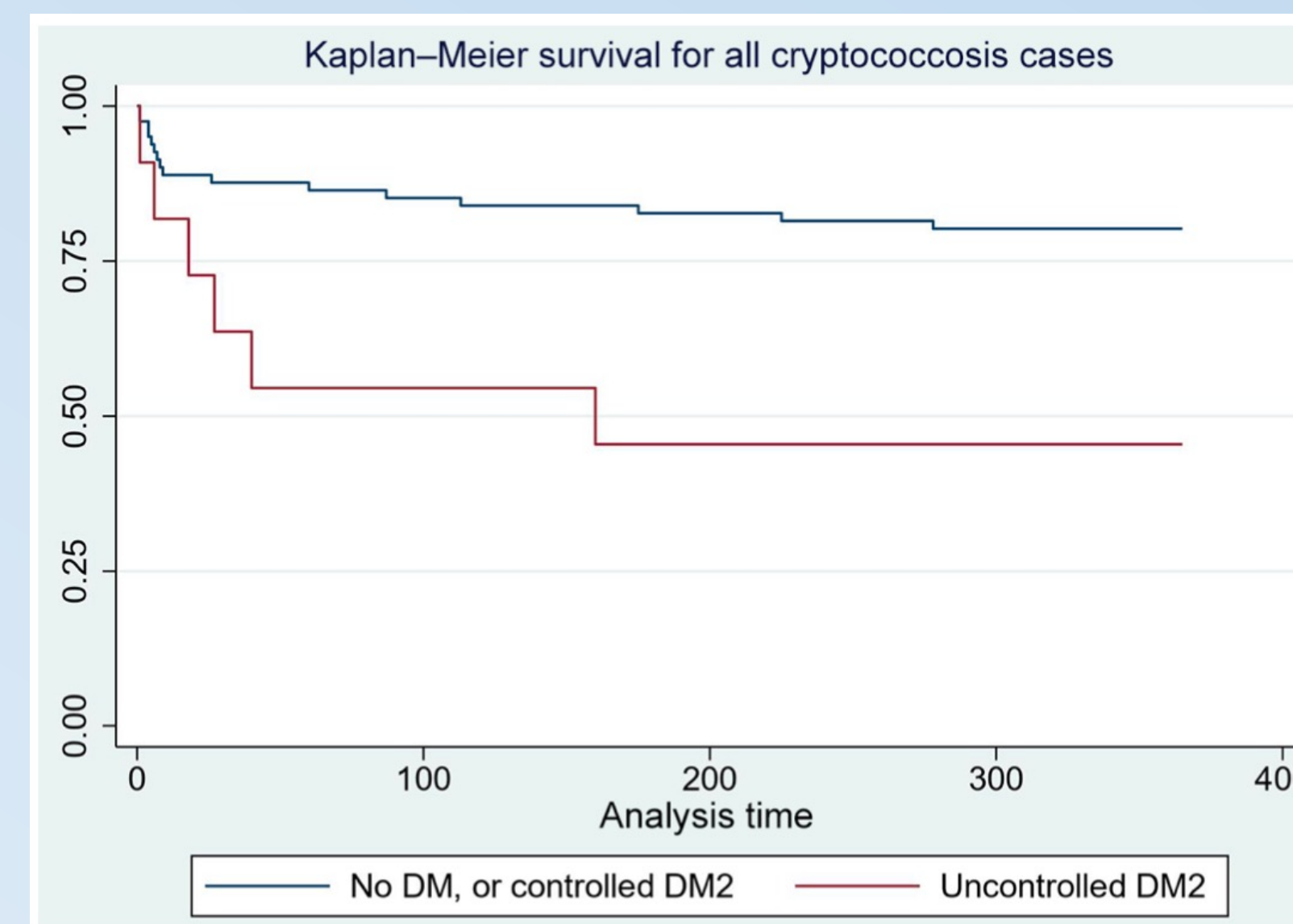
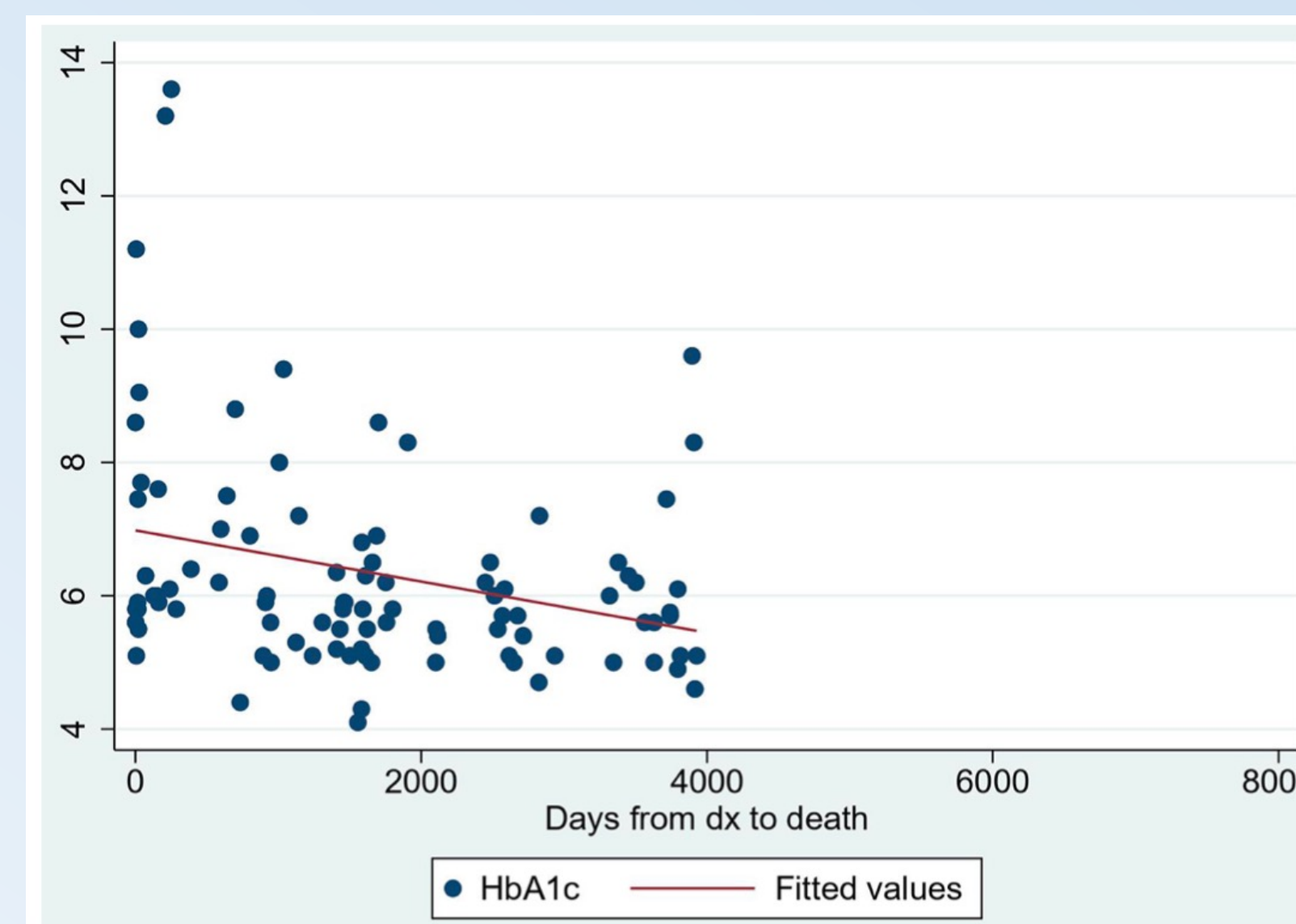


Figure 2.



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
- **There was an increased rate of death for uncontrolled diabetes at 10 weeks and 1 year for all cryptococcus cases (figure 1).**
- **As A1c increased, time to death decreased (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.