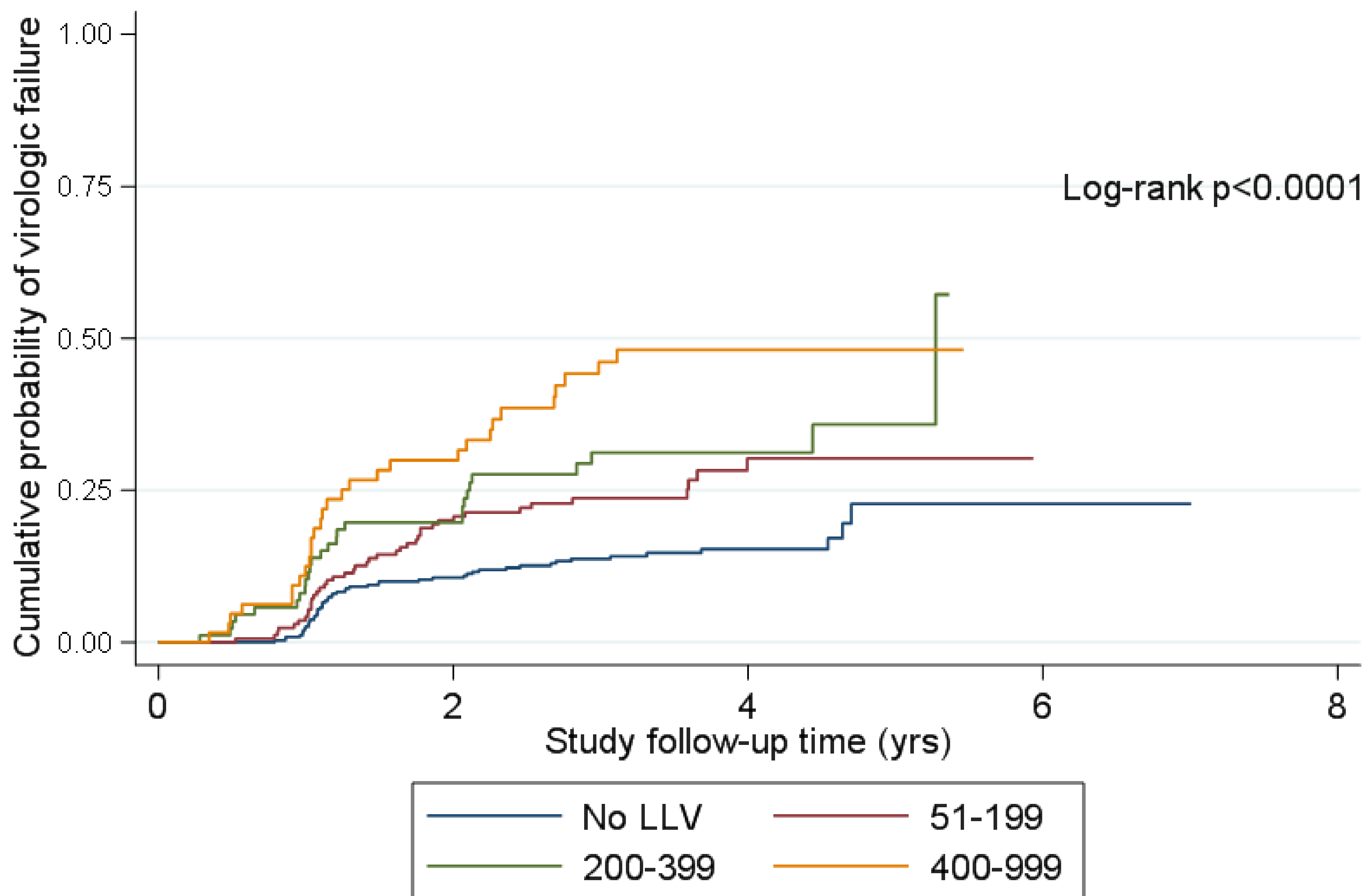


Low-level viremia is associated with viral failure in CALHIV – higher levels of viremia correspond to higher risk of failure.

Kaplan Meier plot of cumulative probability for virologic failure by level of LLV



Low-level viremia as a risk factor for virologic failure in children and adolescents living with HIV

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Background

- Virologic failure (VF) is defined as ≥ 1000 copies/mL in majority of developing countries
- Increasingly, studies show "low-level viremia" (LLV) (VL from 50-999 copies/mL) is a risk factor for future VF

Methods

- A retrospective chart review was performed using the health records from the Baylor College of Medicine Children's Foundation - Tanzania sites in Mbeya and Mwanza
- CALHIV up to the age of 19 years who had been on antiretroviral therapy (ART) for ≥ 6 months (by July 2021) were included in the analysis
- Participants were followed longitudinally for at least two subsequent VLs after an initial undetectable VL (< 50 copies/mL)

Results

- A total of 670 CALHIV were included in the outcome analysis
- LLV occurred in 47.5% (318/670) and of those, 52.5% (167/318) had VL 50-199 copies/mL, 27.4% (87/318) had 200-399 copies/mL, and 20.1% (64/318) had 400-999 copies/mL
 - The Kaplan-Meier plot (figure) shows higher risk of failure with higher LLV category ($p < 0.0001$)
- For predictors of VF, a Cox proportional hazard model showed that there was an increased risk of VF with higher LLV when compared to < 50 copies/mL: adjusted hazard ratio (AHR) 1.73 with 50-199 copies/mL ($p = 0.01$), AHR 2.19 with 200-399 copies/mL ($p = 0.001$), and AHR 3.34 with 400-999 copies/mL ($p < 0.0001$)
- On multivariable analysis, age of 10-14 years ($p = 0.03$) and immunosuppression, moderate ($p = 0.008$) or severe ($p = 0.009$), were associated with VF

Conclusions

- LLV was associated with increased risk of VF with higher levels LLV corresponding to higher risk. Age 10-14 years and immunosuppression were also associated with increased risk of VF.