Outcomes of critical illness in peoples with Advanced HIV Disease: 30 years of binational data

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Background:
Admission to an Intensive Care Unit (ICU) for people with Advanced HIV Disease (AHD) was historically controversial due to poor prognosis of HIV without effective treatment. Despite improvements in ICU and HIV care, longitudinal outcome data in critically ill people with AHD are limited. We investigated changes in demographics and outcomes in people with AHD admitted to ICUs in Australia and New Zealand over three decades

Methods:
We performed a retrospective cohort study of ICU admissions in Australia and New Zealand between January 1993 and December 2022, in patients with a comorbid diagnosis of AHD. AHD was defined according to Acute Physiology and Chronic Health Assessment-IIIj, requiring an HIV diagnosis plus AHD-defining complication. Descriptive analysis was performed. Longitudinal changes in mortality were reported. Admissions were stratified by decade.

Results:
There were 1505 ICU admissions with comorbid AHD over the study period. Between the first and third decades, patient age increased significantly(median 41 years, IQR 34-52 vs median 53 years, IQR 44-63, p<0.001). The proportion of patients with one or more chronic comorbidity using APACHE-IIIj scoring increased over time (18% vs 26% p=0.009). Crude hospital mortality reduced significantly from 36% in 1993-2002 to 14% in 2013-2022 (p<0.001). Mortality improvements remained significant after adjustment for acute and chronic illness severity (using APACHE-IIIj risk of death) and hospital type (adjusted OR of death by decade 0.43, 95% CI 0.35-0.53). The proportion of patients with a primary admission diagnosis of infection remained fairly stable (36% to 35%) but respiratory infectious diagnoses reduced (28% to 15%) and other infectious diagnoses increased (5% to 18%).

Conclusion:
Despite advances in HIV care, a subset of people with AHD require ICU admission. Mortality in this group has improved by more than 50%.

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