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Diabetes mellitus-related comorbidities among patients attending two major HIV clinics in Botswana: A 12-year retrospective cohort study

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Background: An association between combination antiretroviral therapy (cART) and diabetes-related comorbidities (DRCs) has been found in some countries. However, data on the incidence of DRCs among cART recipients in Botswana are not available. The objectives of this study were to estimate the incidence of DRCs among cART recipients, assess the time-to-event in the presence of censored cases and identify cART regimens most associated with DRCs.

Methods: 531 patients who were on cART at Princess Marina Hospital (PMH) HIV clinic and Bontleng HIV clinic were identified and retrospectively followed for 12 years. Each of the 531 patients was on one of the three standard first-, second- or third-line cART regimens. Person-years (PY) were used to compute the incidence of DRCs. Kaplan-Meier survival analysis was performed to compare survival of first-line cART patients to that of second-line/third-line cART patients. Cox regression was used to investigate associations with DRCs.

Results: The incidence of DRCs was found to be 26.8/1000 PY, with total time of exposure of 3316 PY. The average duration to event for all the 3 regimens was 11.72±0.20 years. The first-line cART regimen had a shorter mean ± SE duration of 10.59±0.26 years to the event compared to 12.69±0.24 years for the second-line/third-line regimen. Both the first-line cART and second-line/third-line cART were associated with DRCs but recipients on the first-line cART had a significantly shorter survival than recipients on second-line/third-line cART (Log-rank $\chi^2=8.98$, $p<0.003$).

Conclusion: Both the first-line cART and second-line/third-line cART were associated with DRCs but the risk of developing DRCs per year of exposure was significantly greater for patients who were on first-line cART compared to those who were on second-line/third-line cART. Close monitoring of current cART treatment in patients and possible development of DRCs and other chronic non-communicable diseases is recommended in an effort to improve longevity and quality of life in people living with HIV/AIDS.

Biography

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