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SEXUAL HEALTH

Corrigendum to: Under-utilisation of cardioprotective glucose-lowering medication in diabetics living with HIV

Bakani Butale, Ian Woolley, Kathryn Cisera, Tony Korman and Georgia Soldatos

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The author advises that there was an error in the title of their article. The correct title should have read:

Under-utilisation of cardioprotective glucose-lowering medication in people living with HIV and diabetes

In addition, the term ‘diabetics’ should have read ‘people living with diabetes’ throughout the article.

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LETTER TO THE EDITOR
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SEXUAL HEALTH

Under-utilisation of cardioprotective glucose-lowering medication in diabetics living with HIV

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ABSTRACT

Diabetes is an increasingly common co-morbidity in people living with HIV (PLWH). Given new evidence demonstrating cardiovascular benefits of sodium glucose transporter 2 inhibitors (SGLT2i) and glucagon-like peptide 1 receptor agonists (GLP1RA) in diabetic patients, we reviewed medical charts of 262 PLWH at Monash Health through a 1-year retrospective cohort study to determine the rates of their use. Prevalence of diabetes was 13.4% (35) and 60% (21) had microvascular and macrovascular complications. Only 4% (95% CI 0.1%–19.6%) of diabetic patients were receiving SGLT2i and 19% (95% CI 6%–39.4%) were receiving GLP1RA. Prescribers should carefully consider their choice of glucose-lowering medication when treating PLWH.

Keywords: cardiovascular, diabetes, evidence-based medicine, GLP1RA, glucose-lowering medications, HIV co-morbidities, HIV/AIDS, SLGT2i.

The estimated prevalence of diabetes is fourfold higher in people living with HIV (PLWH),[1] and thought to be due in part to antiretroviral therapy induced lipodystrophy and the pro-inflammatory state associated with HIV.[1] Currently, limited guidelines exist for management of diabetes in PLWH.

Glucose-lowering medications such as sodium glucose transporter 2 inhibitors (SGLT2i) and glucagon-like peptide-1 receptor agonists (GLP1RA) have beneficial cardiovascular effects. Both drug classes are reported to reduce mortality from cardiovascular disease and all-cause mortality in placebo-controlled trials.[2,3] Weight reduction and improved lipid levels were also noted with SGLT2i.[2] Given increased cardiovascular risk in PLWH, and these cardiac benefits of SGLT2i and GLP1RA, we sought to determine rates of their use in diabetic PLWH.

A 1-year retrospective cohort review of the medical records of PLWH presenting to the HIV clinic at Monash Health (Melbourne, Australia) in 2019 was conducted. The network has five hospitals servicing 1.5 million people. The study was approved by the institutional Human Research Ethics Committee.

A total of 262 PLWH were enrolled and 13.4% had diabetes (95% CI 9%–17%). Patients with diabetes were older, had a higher waist circumference and were more often on antihypertensives and lipid-lowering medication (Table 1).

In diabetic PLWH, 45% had glycated haemoglobin (HbA1c) ≤ 7.0% (53 mmol/mol) and 24% had a reading >9.0% (75 mmol/mol). Nine patients were managed with lifestyle interventions. For those on glucose-lowering therapy, 19 (73%) were on Metformin, 13 (50%) on insulin, 8 (31%) on sulphonylureas, 10 (38%) on dipeptidyl peptidase-4 inhibitors, 5 (19%, 95% CI 6%–39.4%) on GLP1RA, 2 (8%) on acarbose, 1 (4%, 95% CI 0.1%–19.6%) on SGLT2i and 1 (4%) on thiazolidinediones.

Twenty-one patients had a diabetes complication. Microvascular complications were reported in 18/26 (69%) of screened patients and 13 (37%) had established macrovascular complications. Microvascular complications were documented in four patients on GLP1RA and none on SGLT2i. During the 12-month study period, 51% of PLWH had diabetes had visited an endocrinologist, 11% had seen a dietitian and 26% had seen a podiatrist.

The use of SGLT2i and GLP1RA in PLWH with diabetes in our cohort was low despite many engaging with an endocrinologist. In diabetes patients without HIV, reported use

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Table 1. Patient characteristics.

	No diabetes (n = 227)	Diabetes (n = 35)	P-value
Age (years)	45.8 ± 2	58.6 ± 4	<0.01
Gender			0.43
Male	70.5% (160)	62.9% (22)	
Female	29.5% (67)	37% (13)	
Duration of HIV diagnoses (years)	9 ± 1	12 ± 3	0.02
CD4 count	657.3 ± 44.03	682.8 ± 113.58	0.31
Viral load			1.0
Low (<500 copies/mL)	94.9% (205)	97.1% (34)	
High (≥500 copies/mL)	5.09% (11)	2.86% (1)	
Mean blood pressure (mmHg)			
Systolic	127 ± 3	132 ± 5	0.02
Diastolic	78 ± 2	79 ± 3	0.27
Blood sugar levels			
Random blood glucose (mmol/L)	5.40 ± 0.17	12 ± 4.29	<0.01
Fasting blood glucose (mmol/L)	5.28 ± 0.17	7.82 ± 1.38	<0.01
HbA1c (%)	5.49 ± 0.12	7.93 ± 0.75	<0.01
Had a blood sugar test in the past 12 months	78%	97%	
Mean lipids (mmol/L)			
Total cholesterol	5.04 ± 0.15	4.74 ± 0.45	0.10
HDL	1.33 ± 0.05	1.18 ± 0.12	<0.01
LDL	2.95 ± 0.14	2.59 ± 0.40	<0.05
Triglycerides	1.77 ± 0.15	2.02 ± 0.31	0.07
BMI ($kg/m^{2)}$	26.5 ± 1.63	30.2 ± 3.57	0.06
Waist circumference (cm)	95 ± 3.1	109 ± 8.5	<0.01
Obstructive sleep apnoea	3% (7)	17% (6)	<0.01
Lipid-lowering medication	14% (32)	66% (23)	<0.01
Anti-hypertensive medication	14% (31)	51% (18)	<0.01
ARB/ACEi	71% (22)	89% (16)	0.18
Smoking			0.35
Yes	20% (45)	11% (4)	
No	80% (182)	89% (31)	

Data presented as mean ± 95% CI or % (n). HbA1c, glycated haemoglobin; HDL, high-density lipoprotein; LDL, low-density lipoprotein; BMI, body mass index; ARB, angiotensin-receptor blocker; ACEi, angiotensin-converting enzyme inhibitors.

of SGLT2i was higher (11.2%) and GLP1RA was lower (8.0%) relative to rates in this study.[4] Literature on use of SGLT2i and GLP1RA in PLWH is sparse. Case reports of Liraglutide and Canagliflozin noted reductions in weight and abdominal circumference, reduction in blood pressure, improved lipid profiles, improved insulin sensitivity and reduction or cessation of insulin therapy.[5,6] No efficacy or safety data exists.

These results suggest that management of diabetes in PLWH is behind current evidence which supports the use of SGLT2i and GLP1RA as second-line therapy in those with established atherosclerotic vascular disease or where optimising weight is a priority. It is possible that low rates of SGLT2i and GLP1RA are due to prior discontinuation following adverse effects. Furthermore, lack of evidence on efficacy of SGLT2i and GLP1RA in PLWH and poor clinician familiarity regarding possible drug interactions with HIV medications might deter clinicians from prescribing them.

Despite the small sample size and retrospective nature of our study, these results highlight the low rate at which glucose-lowering medication with cardiovascular benefits are being adopted in PLWH, as well as persistent poor glycaemic control despite specialist-level care. Clinicians should carefully consider their choice of glucose-lowering medication when treating PLWH. Future research should

also investigate the safety and efficacy of GLP1RA and SGLT2i in PLWH with diabetes. Finally, the potential for joint HIV-diabetes services should be explored to reduce fragmentation of care.

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Data availability. The data that support this study will be shared upon reasonable request to the corresponding author.

Conflicts of interest. The authors do not have any potential financial or personal interests to declare.

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