Manuscript :

A 37 year old Eritrean migrant presented to our hospital with cardiac failure and malignant hypertension. Clinical history was notable for heavy consumption of khat; our patient chewed it recreationally with friends weekly, and also intentionally for its amphetamine effect to stay awake into the night to watch international football games. He had additional cardiac risk factors of obesity (body mass index 37kg/m^2) and ex-cigarette smoking (approximately 4 pack-years). There was no other medical history and he took no regular medications nor other illicit drugs.

On presentation, blood pressure was 230/100mmHg and heart rate 110bpm. Troponin I was mildly elevated at 79ng/L (normal $<26\text{ng/L}$), and B-type natriuretic peptide (BNP) was 311ng/L (normal $<100\text{ng/L}$). Screening for potential secondary causes of hypertension (including renin : aldosterone ratio, urinary cortisol, and a vasculitic screen) was negative. Echocardiography demonstrated a dilated cardiomyopathy with severe biventricular systolic dysfunction (LV ejection fraction 25%) and moderate functional mitral regurgitation. Coronary angiography revealed normal coronary arteries but confirmed severe global left ventricular dysfunction.

Our patient commenced appropriate anti-hypertensive and heart failure therapy in keeping with current management recommendations for methamphetamine cardiomyopathy and hypertension¹. The likely culprit role of khat and need for future abstinence was explained. Follow-up cardiac MRI within two months of total khat cessation demonstrated near-complete recovery, with ejection fraction 48%, mild LV dilation, mildly increased LV wall thickness, and no late gadolinium enhancement to suggest established fibrosis.

Khat (*Catha edulis*) is a leaf with amphetamine-type properties cultivated in East Africa and the Arabian Peninsula since the 7th century. It is estimated there are 20 million users of khat worldwide, with khat-chewing traditionally restricted to men². Documented adverse health effects include psychosis, peptic ulcer disease, hepatitis, cardiomyopathy, accelerated coronary artery disease and malignant hypertension^{3,4}.

Khat is classified by the WHO as a drug of abuse, and is illegal in the US, Canada, and over half of the EU. Until recently, licensed persons in Australia could legally import 5kg per month for personal consumption; under these generous regulations over 2,000kg was imported in 2008 alone⁵. In response to increasing community concerns (including a petition by women of the Australian Somali community), importation since April 2015 has now been restricted to scientific use². Despite these new measures, khat usage anecdotally remains high within African communities³.

The East African community of Australia is now significant, numbering in tens of thousands of people³. Khat-induced hepatitis has already been reported in Australia⁴

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and, with increasing migration, khat-related health problems are likely to become more prevalent in Australian health care settings. This case underlines the need for physicians caring for East African patients, particularly males, to enquire as to khat consumption as part of comprehensive health screening.

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Abstract :

- Khat is a drug of abuse used by millions of people, particularly in communities of the Horn of Africa and Arabian Peninsula. Multi-organ adverse health effects are serious, and import into Australia was only recently regulated.
- This case of reversible cardiomyopathy and malignant hypertension underlines the need for physicians caring for East African patients to enquire as to khat consumption as part of comprehensive health screening

Author Manuscript

Title : 'First reported case of khat cardiomyopathy and malignant hypertension in Australia'

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