

A comprehensive Program for Evaluation of Musculoskeletal Health and Pharmacist Medication Review

Executive Summary

The relationship of illicit drug use with musculoskeletal health is largely unknown. In this study, we evaluated the association of illicit drug use with bone mineral density (BMD) and muscle parameters in 108 illicit drug users (including current users and those with history of illicit drug use) and 1345 non-users from the Chinese population residing in Hong Kong. BMD was measured using dual energy X-ray absorptiometry (DXA). Skeletal muscle mass, function and strength as represented by appendicular lean mass (ALM), gait speed and handgrip strength were assessed by bioimpedance analyzer, 6-meter walk test and dynamometer, respectively. Peak expiratory flow (PEF) rate, a measure of function and strength of the respiratory muscle, was also tested by a hand-held peak flow meter. Analysis of covariance (ANCOVA) was applied to evaluate the association of illicit drug use with various bone and muscle parameters, with adjustment for age, sex, body mass index, smoking and drinking status, and physical activity. Compared with non-users, individuals with illicit drug use had a lower BMD (g/cm^2) at lumbar spine (mean difference: -0.046), femoral neck (-0.047), and total hip (-0.05). Similarly, illicit drug use was significantly associated with reduced muscle parameters when compared to the non-users, with the estimated mean difference of -0.656kg, -0.107m/s, -1.852kg, and 59.24 L/min for ALM, gait speed, grip strength, and PEF rate, respectively. In conclusion, individuals with illicit drug use were shown to have reduced BMD, diminished skeletal and respiratory muscle health when compared to non-users, implying that illicit drug users may have elevated risk of morbidity (such as osteoporosis and sarcopenia), decreased

quality of life, increased risk of immobility and mortality. Such findings should be disseminated to the public for motivating the quitting intention of drug abusers and reducing illicit drug use. It may also provide the basis for the healthcare professionals to formulate plans to improve the musculoskeletal health of illicit drug users.