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Lipid
Forum



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SHARP PRIZE ABSTRACTS

Relationship Between Cardiovascular Disease Pathology and Fatal Opioid and Other Sedative Overdose: A Post-Mortem Investigation and Pilot Study

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Introduction: In 2019, Scotland reported the highest number of drug deaths amongst EU countries. Of the 1264 drug deaths reported in 2019, 94% were related to polysedative use. Studies have proposed a relationship between opioid use and cardiovascular disease. Furthermore, the concomitant use of sedatives and opioids has been associated with lethal cardiopulmonary events. However, evidence is still limited for the relationship between polysedative use and cardiovascular diseases. Thus, the present study aimed to investigate the association between polysedative use and the underlying cardiovascular pathologies in drug deaths.

Method: This study consisted of a post-mortem investigation of 436 drug deaths. Data extracted from post-mortem reports included socio-demographic characteristics (e.g. gender, age), cardiovascular pathologies (e.g. atherosclerosis, atheroma, and inflammation), in addition to the presence of opioids (e.g. methadone, heroin) and other substances (e.g. alcohol, benzodiazepine) in the blood of the deceased. Stepwise multiple regression models were employed to identify which substances predicted cardiovascular pathologies.

Results: The presence of opioids, benzodiazepines, and alcohol in the blood of the deceased predicted overall cardiovascular disease (CVD) severity [$R^2 = 0.33$, $F(5, 430) = 39.64$, $p < 0.0001$; adjusted $R^2 = 0.32$, $f_2 = 0.49$]. Positive Beta coefficients may indicate an exacerbation of CVDs ($\beta = 0.48$) due to the presence of opioids in the blood of the deceased.

Conclusion: These findings may inform national clinical guidelines on the need to monitor individuals who abuse opioids for presence of cardiovascular disease risk factors pathologies and provide timely interventions to reduce mortality in the population.

Stage of career: PhD student