



E91 The Abuse and Misuse of Prescription Opioids: Is It Only an American Problem?

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Learning Overview: The objective of this study is to analyze the Italian context to better understand if there is the possibility of an epidemic of addiction, as is the case in the United States and Canada.

Impact on the Forensic Science Community: This study will impact the forensic science community as many studies have analyzed the American and Canadian “epidemic of addiction” of prescription opioids, but very little has been written on the European situation, including Italy.

Medical use of prescription opioids has been constantly increasing since the 1990s, particularly in the United States and Canada, together with the misuse and abuse of these substances, and a significant rise in the rates of dependent individuals and deaths related to prescription opioids. The situation has become so dramatic, it has led the American authorities to speak of an “epidemic of addiction” and introduce a series of countermeasures in order to better face the problem. Even in Europe, there has been an increasing use of prescription opioids and related problems, but the European context is much less dramatic than the American and Canadian ones. Nevertheless, data does not allow the exclusion of the possibility that a similar crisis will also occur in the “old continent.”

Considerable concern surrounds tramadol, whose prescription is not placed under specific control as is the case for other opioids. The objective of this study is to analyze the Italian context to better understand if, as for the United States and Canada, there’s the possibility of an epidemic of addiction. A detailed review of autopsy records and toxicology reports was conducted at the Forensic Institute of “Sapienza” University of Roma to find cases of deaths related to the use of prescription opioids. The initial list of cases was compiled based on searches including the terms “overdose,” “opioid,” and “synthetic opioid.”

More than 170 cases were reviewed based on these search parameters. Only cases involving deaths related to the use of prescription opioids were included in the final dataset. After the vetting process, 60 different case numbers were found between 2014 and 2019 that pertained to deaths related to the use of prescription opioids. It was not possible to analyze the years prior to 2014 because prescription opioids were not routinely searched.

The cases of death, following the assumption of prescription opioids, were analyzed through the preparation of toxicological samples prepared with routine methods, followed by systematic screening for substances by diverse methods. Volatile compounds were identified using Gas Chromatography/Flame Ionization Detection (GC/FID). Medical drugs and drugs of abuse were identified via the use of Gas Chromatography/Mass Spectrometry (GC/MS) and liquid chromatography/tandem mass Spectrometry (LC/MS/MS).

Of a total of 60 subjects, 44 died due to an overdose of tramadol; while 12 died due to an overdose of buprenorphine, and 4 due to fentanyl overdose. Of the deceased, most were males and the most-used drug was tramadol. In all cases, the macroscopical examinations did not reveal any organ abnormality that could explain deaths. Through histological examinations with hematoxylin/eosin, no significant findings emerged apart from widespread edema and focal sclerosis of the myocardium, and interstitial and alveolar edema of the lungs.

This work shows that attention must be paid to prescription opioids, especially those considered “safer” as tramadol and buprenorphine. The fact that there is not a full-blown epidemic concerning the deaths related to the use of these drugs does not justify a carelessness of European institutions and they must implement preventive measures that avoid the recurrence of the North American situation.

Opioids, Dependence, Pain