Suicide and forensic toxicology results: retrospective study of the cases from the south branch of national Institute of Legal Medicine and Forensic Sciences (2007 – 2012)

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Abstract

Introduction: Toxicological analyses are an important complementary exam for medico-legal autopsies, particularly in cases of suicide associated to substance use and dependency. Suicide sub-notification has been recognized worldwide as a serious public health issue, namely in fatal intoxication cases without enough circumstantial information for the differential diagnosis between accident and suicide.

Objectives: To characterize the forensic toxicology results in victims of suicide and violent deaths of undetermined intent, subjected to medico-legal autopsy in the South Branch of National Institute of Legal Medicine and Forensic Sciences, between 2007 and 2012.

Methods: A total of 996 medico-legal autopsy cases were identified, in which circumstantial information of suspected or probable suicide was registered at the corpse admission. We excluded 125 cases in which no toxicological exams were performed, ending up with a total sample of 871 cases.

Results: In 774 (90%) of these, the basic cause of death was certified as suicide, and in the remaining as undetermined intent. The direct cause of death resulted from intoxication in 108 (14%) of the suicide cases, and in 69 (71%) of the undetermined intent cases. Pharmaceutical drugs were surveyed in the forensic toxicology laboratory in 96% of the overall cases, and were found to be the cause of the majority of the intoxications: 60 (56%) of the suicide cases and 44 (64%) of the undetermined intent cases. In both groups, the most common pharmacological classes were benzodiazepines, antidepressants and antipsychotics.

Discussion: Our data shows a high prevalence of consumption of psychiatric medication, with obligatory medical prescription, among victims of suicide and intoxications of undetermined intent. Access to suicide methods is known to have a decisive influence on the direct causes of death of the victims, so it is relevant to discuss the patients’ access to toxic amounts of prescription drugs.

Conclusion: The analysis of this data might be an important contribution to a better definition of suicide prevention strategies, with a focus on medical drug prescription in psychiatric patients.