K5 Self-Administration of Anesthetic (Propofol and Midazolam) and Psychotropic (Amitriptyline and Zolpidem) Drugs: Recreational Abuse and Suicidal Manner in an Anesthetist

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After attending this presentation, attendees will understand that forensic investigations are based on a multidisciplinary approach in which autopsy findings and toxicological results often result in association with circumstances and crime scene investigations.

This presentation will impact the forensic science community by demonstrating how recreational abuse of anesthetic and sedative agents in health care practitioners, especially anesthesiologists is an increasing event. This presentation will also show an unusual case of suicide in which the manner and means of suicide was dependent upon the occupation of the victim.

Presented is a case of a 50-year-old man, anesthetist at the main local hospital, who was found dead in the house where he lived alone since separating from his wife. On the previous evening he was found on the landing's floor with an occipital bruise injury and treated in the Emergency Department. The next day his brother, alerted by his colleagues that tried in vain to contact him, went to his house. He found that the front door had been left ajar, with a piece of furniture behind it.

When he entered the flat, he noticed the corpse of the brother, supine on the living room's floor near a piece of furniture. There were two drips with intravenous tubes almost empty (approximately 1 ml). One drip was still inserted in the dorsum of the victim's right hand with tube for intravenous drip totally open. On the glass of this drip there was written "Miclela Caput" (meaning "Caput Mixture," written incorrectly). On the glass of the other drip there was written "500 TPS+200 DIPR" (meaning Sodium Thiopental+Diprivan). In the house there were some empty blisters of Zolpidem, more than 20 packs of different drugs (some of them empty), an ash-tray containing white liquid, several empty ampoules of Propofol, Midazolam and Thiopental, and several new and used syringes. In the bedroom there were two knapsacks containing pornographic materials and four plastic phalli.

External examination revealed abundant livor mortis, numerous recent needle marks with fresh and older hemorrhages in both arms, and a sutured occipital injury.

Autopsy and histological findings were pulmonary and brain oedema, moderate fatty liver, acute poly-visceral congestion, hemorrhagic pancreatitis.

Systematic toxicological analysis was performed on biological and non biological samples for alcohol, drugs of abuse and pharmaceuticals.

Blood toxicological examination by GC/MS revealed lethal concentration of Zolpidem (0.86 µg/ml) and high therapeutic blood concentrations of Propofol (0.30 µg/ml), Midazolam (0.08 µg/ml), Amitriptyline (0.07 µg/ml), and low concentration of Thiopental (0.03 µg/ml). Zolpidem was also found in gastric content while Thiopental was found in urine. Hair segment analysis (0 – 2 cm) revealed Propofol (4,7 µg/mg) and the presence of Zolpidem, Amitriptyline and Ketoprofen.

Residual's toxicological analysis of the inserted drip ("Caput mixture") revealed Propofol and Midazolam (approximately 1,9 and 0,08 mg/ml). Analysis of the non-inserted drip, showed Propofol and Thiopental (approximately 2 and 5 mg/ml). The low blood concentration of Thiopental suggests a self administration of the non-inserted drip at least 12 hours before death.

The blood Propofol level was lower than or within the commonly accepted therapeutic range of 1.3– 6.8 µg/ml after a standard anesthetic induction dose. Published reports indicate that in most cases, the postmortem Propofol concentrations were at therapeutic levels. It should be pointed out that especially for those agents used in anesthesia; the therapeutic concentrations refer to patients being supported respiratory- wise, while in non-supported or non-intubated patients such concentrations may be lethal. Most of those deaths are thought to have occurred because of the rapidity of Propofol's injection which led to apnea and death. A mere interpretation of the blood and tissue concentrations of Propofol in the toxicological analysis may be of limited diagnostic significance without taking into account the before mentioned reports. Toxicological analysis of hair confirmed the recreational abuse of Propofol.

These anesthetic and sedative drugs are often used in combination for anesthesia's induction. All of these act synergistically in combination and may induce respiratory depression. This effect depends on

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individual susceptibility, on dose used and, especially for Propofol and Midazolam, infusion's rapidity.

In conclusion, the victim was administered a solution of anesthetic drugs, rapidly infused in a lethal combination and simultaneously a hypnotic drug in lethal dose.

Anesthetic Drugs, Propofol, Suicide

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