

H43 A Fatal Sex and Drug Party: Understanding the Real Cause of Death

Ciro Di Nunzio, MFS, PhD*, Magna Graecia University, Viale Europa, Germaneto, Institute of Legal Medicine, Catanzaro 88100, ITALY; Isabella Aquila, MD*, Magna Graecia University, Viale Europa, Germaneto, Institute of Legal Medicine, Catanzaro 88100, ITALY; Aldo Di Nunzio*, Magna Graecia University, Viale Europa, Germaneto, Institute of Legal Medicine, Catanzaro 88100, ITALY; Luca Lepore, Magna Graecia University, Viale Europa, Germaneto, Institute of Legal Medicine, Catanzaro 88100, ITALY; Michele Di Nunzio, BS, Biogem scarl, Via Camporeale, area PIP, Ariano Irpino (AV) 83310, ITALY; Matteo Antonio Sacco, MD, Magna Graecia University, Viale Europa, Germaneto, Institute of Legal Medicine, Catanzaro 88100, ITALY; Antonio Perna, MD, Magna Graecia University, Viale Europa, Germaneto, Institute of Legal Medicine, Catanzaro 88100, ITALY; and Pietrantonio Ricci, Viale Europa-Località Germaneto, Catanzaro 88100, ITALY

After attending this presentation, attendees will better understand the death differential diagnosis of the mechanical obstruction of external airways, the depressing effects of heroin on the respiratory centers of the brain, and the anaphylactic disorder caused by the interaction of heroin with mast cell receptors.

This presentation will impact the forensic science community by providing results of a multidisciplinary collaboration, which is fundamental to understanding the cause of death associated with the use of heroin in drug addicts. Moreover, it is hoped that tryptase levels in the blood and in the pericardial fluid will be routinely analyzed in heroin death cases.

In early February 2015, two drug dealers organized a sex and drug party in a flat located in the vicinity of Naples, Italy. The police were wiretapping them. During a telephone conversation, the police heard one of the drug dealers say, “She died by suffocating on by my big penis during the fellatio ... we left her on the street.” The next morning, a resident found a body on the street near the flat where the party took place. The forensic expert who arrived at the scene said the victim was allegedly 30 years of age, 174cm tall, and had presumably died the previous day. There was a reddish fluid discharge around her mouth and nose. Her leggings were lowered and the gluteal region exhibited signs of dragging via an inflammatory infiltrate. The corpse was identified as the transsexual BC.

The autopsy did not reveal any signs of venipuncture or violence. The victim hadn't been raped prior to death. The medical examiner found pulmonary congestion and general congestion of the parenchymal organs resulting from blood stasis. Petechial hemorrhages and brain swelling were also found. The examiner took oral, vaginal, and anal swabs for genetic analysis, and blood, urine, and bile for toxicological tests. Only the vaginal swabs were positive for the presence of sperm, and the DNA profile obtained was a mixture comprised of BC's epithelial cells and sperm cells of unknown people. The blood tests were positive for morphine (251ng/ml), 6-monoacetylmorphine (15ng/ml), codeine (32ng/ml), cocaine (167ng/ml), and benzoylecgonine (350ng/ml). The urine analysis was positive for morphine (224ng/ml), codeine (11ng/ml), cocaine (39ng/ml), and benzoylecgonine (1,172ng/ml). The bile was also positive for morphine (720ng/ml), 6-monoacetylmorphine (27ng/ml), codeine (28ng/ml), cocaine (1,768ng/ml), and benzoylecgonine (320ng/ml). The ethanol level was 0.91g/l in the blood and 1.90g/l in the urine.

Additionally, the histopathological analysis conducted on fragments of the central lung parenchymal area revealed activated mast cells, lymphocytes, and monocytes. A tryptase quantification analysis was performed on the serum and on the pericardial fluid. The values were, respectively, 15.8µg/l and 11.1µg/l, both higher than normal.^{1,2}

In conclusion, the absence of signs of venipuncture on BC's body, the presence in the victim's blood and urine of alcohol, morphine, 6-monoacetylmorphine, codeine, and cocaine was proof that she had inhaled drugs. This scenario would suggest she died of a fatal cocktail of drugs and alcohol. Instead, the presence of active mast cells, together with lymphocytes and monocytes in the lungs, associated with tryptase levels in the serum and in the pericardium, revealed that her death had been caused by an anaphylactic disorder.³⁻⁷ When left by the roadside, she was still alive and, with proper resuscitation efforts, she could have been saved.

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Forensic Science, Heroin, Tryptase