Lethal Nitrazepam Intoxications

Report of Two Cases

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Nitrazepam is very seldom responsible for acute fatal poisoning. Nonetheless, it is frequently used as hypnotic throughout the world. For example, of a very large series of cases \((n = 4998)\) of acute poisoning admitted to St. Camillo de’ Lellis Hospital in Rome between 1970 and 1976, six cases of benzodiazepine-related death were registered, only one being due to nitrazepam \([4]\). A few cases of such death have been described by various authors \([8, 9, 12]\). Other rare cases can be found in statistical studies \([6]\).

As this casuistry is so rare, it seemed advisable to report two cases of fatal poisoning by this drug.

Case Histories

No. 1. A 75-year-old man was found at home in a condition of deep coma. By the body, an empty container of dragées of Mogadon (nitrazepam 5 mg) was found. The drug was prescribed for insomnia.

Clinical Conditions at Admission: Deep coma, pin-point miosis, bilateral clonic jerks. Death came after 1 day for respiratory insufficiency and pulmonary edema.
Fig. 1. Case no. 1. Mesencephalon. Note infiltrated thrombi surrounded by a severely edematous area. Hematoxylin and eosin (H & E)

Autopsy (48 h After Death): Visceral congestion and cerebral and pulmonary edema; senile myocardosis, moderate pulmonary emphysema, liver steatosis, chronic pyelonephritis.

Histology: The main gross findings were confirmed. Lungs showed a pseudohemorrhagic congestion. In the mesencephalon, capillary thromboses with granulocytic infiltration of the thrombus, surrounded by high degree edema and degenerated neuronal cells were observed (Fig. 1).

Toxicologic Analysis: Nitrazepam was extracted from organs and biological fluids according to Clifford and Francklin Smith [3], purified by thin-layer chromatography [7], and determined by gas-liquid chromatography [2]. Quantitative results were as follows: liver 0.07 mg% g, kidney 0.07 mg% g, brain 0.04 mg% g, blood 0.12 mg% ml. By TLC two metabolites were identified, 7-amino-1,3-dihydro-5-phenyl-1,4-benzodiazipin-2-one and the 7-acetamino derivative of the former; the 2-amino-5-nitro-benzofenone was not identified.

No. 2. A 40-year-old woman was found dead at home, 48–60 h after death. By the body some empty containers of Mogadon were found.

Autopsy: Visceral congestion, cerebral and pulmonary edema.

Histology: The main gross findings were confirmed. In the mesencephalon capillary thromboses surrounded by severe edema were noted. Some proteinaceous material was observed in the Bowman’s capsule of the kidneys.

Toxicologic Analysis: Nitrazepam was determined as in case no. 1. Quantitative results: liver 0.15 mg% g, urine 1 mg% ml; traces in brain, blood, stomach content. Blood ethanol (head space GLG): 0.18  g/100 ml.