CAUSE OF DEATH DETERMINATION IN CASES OF INTOXICATION-RELATED BREATHING ARREST

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Toxic substances interfere in various ways with different links in the complex chain of processes resulting in breathing and its regulation. Common and thus important for both medical and law enforcement professionals are intoxications causing central nervous system depression and subsequent respiratory arrest - especially ethanol, hypnotica and narcotic drugs. Most of them also weaken physiological reflexes - allowing position-related asphyxia - and facilitate vomiting that produces threat of choking. Some toxic substances, when inhaled, act as respiratory tract irritants which can cause reflexive respiratory block or acute pharynx mucosa swelling resulting in closing the airways. Many toxic gasses directly damage the alveolar cells thus leading to irreversible lung edema. Some substances - mainly drugs normally used in respiratory therapy and anesthesia - cause respiratory muscles relaxation, which have been also used as means to cause asphyxia in criminal activities. Suspected intoxication-related asphyxia case forensic analysis is complex - including autopsy, toxicological and microscopic examination of tissue samples. With modern analytical chemistry tools and methods cause of death determination efficacy in a case of fatal intoxication depends merely on: time distance between intoxication and autopsy; samples amount and quality; available budget and time limits set for the toxicological tests performing.