G5 Serum Levels of Pulmonary Surfactant Associated Proteins A and D (SP-A & SP-D) in Some Causes of Death

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After attending this presentation, attendees will recognize the potential benefits of testing for pulmonary surfactant proteins in certain types of sudden deaths, especially those occurring with an asphyxial or intoxication mechanism.

This presentation will impact the forensic community and/or humanity by demonstrating research that may be considered as a step in determining the potential diagnostic role of surfactant proteins in postmortem settings.

It has been suggested that surfactant proteins A and D (SP-A, SP-D) may be useful markers of lung injury in the clinical setting. In this present study, cadaveric serum samples were analyzed by specific enzyme linked immunoassays for the levels of SP-A and SP-D in certain causes of death, such as mechanical asphyxia, drowning, fire, sudden unexplained deaths, carbon monoxide intoxication, narcotics abuse, and organophosphate poisoning. Results in these types of cases were compared to the serum levels in a group of healthy volunteers, which served as the control group. No significant differences were observed in the median serum SP-A and SP-D concentrations among the groups of volunteers, sudden unexplained death, mechanical asphyxia, and carbon monoxide intoxication groups. Significantly increased SP-A levels compared to controls were found in deaths caused by fire, drowning, narcotic abuse, and organophosphate poisoning. Similarly, increased SP-D levels were observed in fire, drowning, organophosphate poisoning, and narcotic related deaths, when compared to controls and cases of natural sudden death. A positive correlation was found between the levels of SP-A and SP-D. These results suggest that analysis of serum surfactant proteins may be useful in estimating the intensity of alveolar functional damage at autopsy.

Cause of Death, Autopsy, Surfactant Proteins