

[PA4-5] [04/17/2003 (Thr) 14:00 – 17:00 / Hall P]

Postmortem Concentration of Carisoprodol

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Carisoprodol(CSP), commonly prescribed as a skeletal muscle relaxant, is increasingly abused among young people for a recreational purpose in Korea. CSP may induce hallucination if it were ingested with large amounts, furthermore a carisoprodol overdose is considered fatal. Recently, we encountered overdoses of carisoprodol in 6 suicide cases. We developed a rugged, sensitive, and specific method for the determination of CSP and MPB using gas chromatography (GC) and gas chromatography/mass spectrometry (GC/MS) to detect CSP and its metabolite, meprobamate(MPB) in the biological specimens of CSP intoxication. Specimens were adjusted to pH 9 and were extracted with 3ml of anhydrous ether. The organic layer was evaporated and the residue was reconstituted with ethanol, hexane and de-ionized distilled water. The ethanol layer was injected into a GC and GC/MS. Postmortem blood concentrations of CSP and MPB were 33.1–124.4 $\mu\text{g}/\text{ml}$ and 26.8–144.5 $\mu\text{g}/\text{ml}$ respectively. 3 cases of them due solely to the ingestion of CSP, 2 fatal cases due to combined ingestion of dextromethorphan and ethanol was simultaneously detected in 1 case. The order of the tissue concentration of CSP and MPB was liver>kidney>brain. The concentration of MPB was higher than CSP in all tissues. The ratios of MPB to CSP of urine and bile juice are 15.7 and 4.0. There were no correlation of CSP and MPB concentrations among 6 cases. It might be caused by the amount of dose, time to death, difference metabolic time and duration of ingestion between persons.

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Toxicological Study for Blood Cyanide and Carboxyhemoglobin Levels in the Fire-related Fatalities

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The most common cause of death in fires is the inhalation of noxious gases rather than thermal injury. Carbon monoxide is well-known toxic component in fire atmospheres. However, the importance of hydrogen cyanide(HCN) as a toxic agent in the fire related fatalities(FRF) is under discussion. HCN is known to be produced in fires involving by the pyrolysis of polyacrylonitril (PAN) and other nitrogen-containing polymer.

HCN has been found in the blood of the FRF but high blood levels of cyanide were usually associated with lethal levels of carboxyhemoglobin(COHB) in blood. So, It is difficult to relate a blood levels of cyanide in the samples collected from the FRF to probable HCN exposures. There are few toxicological studies for blood cyanide and carboxyhemoglobin levels in the FRF in Korea.

The aim of this work is to determine of COHB and HCN in blood of the FRF. We report 38cases with blood cyanide and carboxyhemoglobin levels in the FRF. The COHB and HCN were quantified in blood of the FRF to elucidated the cause of the death.

Levels of HCN varied between 0.24 and 18.42mg/l(average 4.27 mg/l). Levels of %COHB ranged from 6 to 88%(average 61.26%). Neither drugs of abuse nor psychotropics were detected. Note that most of the cases (28.9%) showed HCN levels of 0–3mg/l and %COHB of 70–80%