



Toxicology Consultants & Assessment Specialists, LLC

**TOXIC EXPOSURES | ENVIRONMENTAL TESTING | RISK ASSESSMENT | FORENSIC TOXICOLOGY | CAUSATION EVALUATION**

# Postmortem Alcohol Formation in a Severely Burned Victim

🕒 November 5, 2013

**Forensic Toxicology: CASE STUDY:** *TCAS plaintiff matter (Duval, FL, 2011-CA-001772; Theodore Leopold, Esq, Palm Beach Gardens, Florida)*

Female plaintiff was involved in a collision in Florida during July, 2008, while riding as a passenger in a Ford F-150 truck driven by her boyfriend. Although the woman suffered only minor injuries during the collision, the truck's fuel system was alleged to be defective when the gas tank was ripped open as the truck ran over a stop sign post cutting through the plastic safety shield covering the plastic fuel tank. The ensuing gasoline spill caused a massive fire with flames shooting more than 20 feet into the air. The fire breached the passenger compartment of the truck killing the boyfriend and causing catastrophic injuries to the plaintiff including the loss of both of her legs and portions of her hands and forearms with severe burns over much of her body. The defendant claimed that the plaintiff and her boyfriend were both intoxicated as, prior to the accident, they had both been at a bar.

## Postmortem Alcohol Formation

Upon review of the matter, Dr. Sawyer noted that the quantity of alcoholic beverage consumed at the bar was discrepant with the postmortem blood alcohol concentration (BAC) of 0.11% noted for the driver and was also discrepant with the postmortem urine and bile alcohol concentrations when applying generally accepted conversion equations. Such data immediately raised a "red flag."

Review of the autopsy report and photos of the driver revealed that approximately 95% of his body was burned so severely that striated muscle and bones were visibly evident. Although not well-known to most professionals, it is generally accepted and documented within the toxicological literature that severely burned postmortem bodies more often than not produce endogenous alcohol. This postmortem alcohol formation stems from microflora deposits on the open tissues causing rapid alcoholic fermentation to occur. This phenomenon has been studied and published in articles by the Federal Aviation Administration (FAA) following the autopsies of hundreds of plane crash victims known not to have consumed alcohol, USS Iowa turret gunnery disaster victims in 1989 and in many other severe burn cases.

Following multiple depositions and a hearing before the judge, Dr. Sawyer was permitted to present the evidence regarding postmortem alcohol formation. After a lengthy three week trial, the jury found that the fuel system was defective and, therefore, partially responsible for the catastrophic injuries to the plaintiff, resulting in a 4.3 million dollar verdict against Ford Motor Company.