



## Pathology Biology Section – 2007

### G27 Suicide by Self Immolation in Cook County, Illinois, USA

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After attending this presentation, attendees will learn of the prevalence of suicide by self-immolation and conditions leading to self-immolation.

This presentation will impact the forensic community and/or humanity by generating awareness of death by self-immolation, discuss, and describe the predisposing factors for this rare cause of death.

Suicide by self-immolation is extremely rare in the United States. This study aims to describe and determine the prevalence of such deaths in Cook County, Illinois, with an ethnically diverse population of 5.5 million people, which includes the city of Chicago and its neighboring suburbs. A thirteen year retrospective study from 1993 to 2005 was conducted to determine whether there were any common factors that lead to death by self-immolation. Computerized records of the Office of the Medical Examiner of Cook County were searched and reviewed for causes of death from self-immolation. The review identified 33 cases from 1993 to 2005 of such deaths. Seven cases were excluded from the study as one was a homicide, four were accident, and two were undetermined.

The age, sex, mental illness history, location of event, yearly incidence, use of accelerant, and presence of witnesses were studied.

Of the 33 cases, 23 were male and ten were female. The male: female ratio was 2.3:1. The ages ranged from 16 to 91 years old. The average age was 38.2 years. Most of the cases were in the 30-39 year age group with the following distribution: three cases (9.1%) were 11-19 years; eight cases (24.2%) were 20-29 years; nine cases (27.3%) were 30-39 years; three cases (9.1%) were 40-49 years; eight cases (24.2%) were 50-59 years; one case (3.0%) was 60-69 years; one case (3.0%) was 90-99 years. Of the 33 cases, 22 were white; ten were black, and one Asian.

Carbon monoxide determination was done in seventeen out of 33 cases. The carbon monoxide level ranged from negative to 45%. The average blood carbon monoxide level was 11.4%. Twenty-two cases received medical treatment.

An accelerant was used in 27 cases (81.84%). Gasoline was the most frequently used accelerant. It was used in 21 cases (63.6%). Charcoal lighter fluid was used in two cases. Acetone in nail polish remover was used in one case. An unknown accelerant was used in four cases.

The majority of self-immolation cases occurred at home, with nine cases. Three cases occurred in the garage adjacent to the home, one case in the front lawn of the home, two cases in the driveway of the home, two cases in the backyard of the home, two cases in a forest preserve, two cases in a parking lot, two cases in an alley, two cases near or on railroad tracks, two cases on a street, and one case each in a church, a college, a grassy area near major toll roads, and a shop.

Nine out of the 33 self-immolation cases were witnessed. Six of the cases had attempted suicide before. One had a prior attempt of self-immolation. Ten subjects had talked previously about suicide. In only five cases, a suicide note was left.

Twenty-seven cases (81.8%) had a history of mental illness, mostly depression. A history of depression was seen in seventeen cases (51.5%).

In ten cases, the cause of death was thermal burns due to self-immolation. Seven cases were determined as thermal burns due to house fire or fire. Four cases were determined as thermal burns due to gasoline fire. Three cases were closed as thermal burns and two cases as simply self-immolation. In two cases, the cause of death was carbon monoxide intoxication due to clothing fire. One case was closed as inhalation of smoke and soot due to house fire. One case each was closed as thermal injury, inhalation injury due to self-immolation, sepsis due to self-immolation, and multisystem organ failure due to thermal burns due to motor vehicle fire.

The study confirms that suicide by self-immolation is extremely rare in Cook County, Illinois, USA with an overall yearly average of 2.54 cases (0.05%). The majority of cases were male, white, with a history of mental illness, and immolated themselves at home.

**Forensic Science, Self-Immolation, Suicide**