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Intentional Ethylene Glycol Poisoning Increase after Media Coverage of Antifreeze Murders

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Background: The media can have a profound impact on human behavior. A sensational murder by ethylene glycol (EG) poisoning occurred in our state. The regional media provided extensive coverage of the murder. We undertook this investigation to evaluate our incidence of EG poisoning during the timeframe of before the first report linking a death to ethylene glycol to shortly after the first murder trial.

Methods: Descriptive statistics and linear regression were used to describe and analyze the number of EG cases over time. A search of the leading regional newspaper's archives established the media coverage timeline.

Result: Between 2000 and 2004, our poison center (PC) handled a steady volume of unintentional exposures to EG [range: 105–123 per year, standard deviation (SD)=7.22]. EG exposures thought to be suicidal in intent increased from 12 cases in 2000 to 121 cases in 2004. In the 19 months prior to the first media report of this story, our PC handled a mean of 1 EG case with suicidal intent per month [range: 0–2, SD=.69]. In the month after the first media report, our PC handled 5 EG cases with suicidal intent. When media coverage was most intense (2004), our PC received a mean of 10 EG suicidal-intent calls per month [range: 5–17, SD=3.55]. Although uncommon, reports of malicious EG poisonings also increased during this same period from 2 in 2000 to 14 in 2004.

Conclusion: Media coverage of stories involving poisonings may result in copycat events, applicable to both self-poisonings and concern for malicious poisonings. Poison centers should be aware of this phenomenon, pay attention to local media and plan accordingly if a poisoning event receives significant media coverage. The media should be more sensitive to the content of their coverage and avoid providing “how to” poisoning information. [West J Emerg Med. 2011;12(3):296-299.]

BACKGROUND

Previous studies have shown that the media can affect human behavior. For example, published literature demonstrates links between the media and several categories of human behavior. Media influence has been implicated in encouraging copy-cat suicide events, sexuality at an earlier age, impressions about ideal body image, eating disorders and violence.¹⁻⁵

In January 2001, a Forsyth County, Georgia, firefighter suddenly died. The Georgia Bureau of Investigation ruled the firefighter died from ethylene glycol (EG) poisoning. At the time of his death, the firefighter was living with a 911 operator

named Lynn Turner. In 1995, Mrs. Turner's husband, a Cobb County, Georgia, police officer, also had died unexpectedly. After the firefighter's death, the police officer's body was exhumed. Ultimately the Cobb County Medical Examiner changed his cause of death from cardiac dysrhythmia to EG poisoning. In November 2002, Lynn Turner was charged with murder.

The regional media provided extensive coverage of the case. The story received national attention in 2004 when the first murder trial was broadcast live on Court TV. During this time period, the clinicians at the Georgia Poison Center

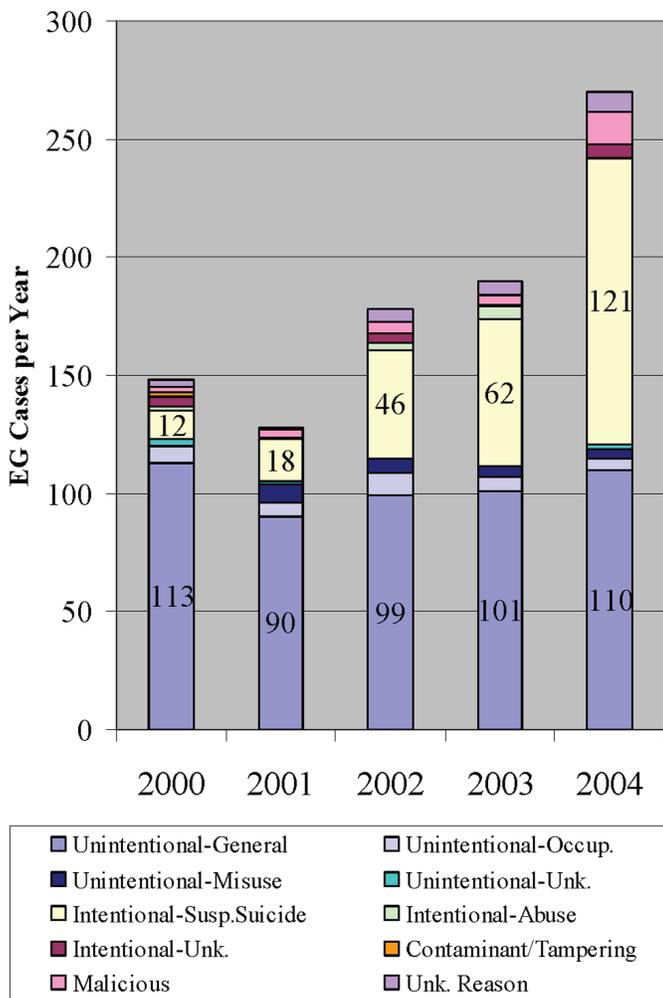


Figure 1. Ethylene glycol (EG) cases by intention.

(GPC) felt there was a significant increase in the number of EG poisoning cases being managed by the center, both by intentional ingestions of suicidal intent and potentially malicious events. We undertook this investigation to evaluate our incidence of EG poisoning during the timeframe of before the murder of the firefighter (2000) to shortly after the first murder trial (2004).

METHODS

The GPC tracks all call data in an electronic database (Call Tracking System, Jacksonville FL). Data fields captured from each call include caller name, date, exposure substance, patient demographics and intent (suspected suicide, malicious, unintentional) of the exposure. We queried this dataset from January 2000 to December 2004, for all exposure cases involving EG. To establish a media coverage timeline of the murder case and to correlate the media coverage with the GPC data, we performed an electronic search of the archives of the Atlanta Journal-Constitution (AJC). We used descriptive statistics and linear regression to describe and analyze the number of EG cases over time.

RESULTS

The results of this retrospective analysis show the number of EG cases by intent per year of study in Figure 1. The annual number of human exposures to EG handled by our poison center increased steadily from 148 to 270. The number of EG cases categorized as suicidal in intent increased ten-fold from 12 cases in 2000 to 121 cases in 2004; however, unintentional EG cases remained steady during our study period with a mean of 115 per year (range: 105-123, SD=7.22). Poison center cases involving suspected malicious EG poisoning increased from two to 14 cases during the study period. Due to the retrospective nature of this analysis, we are unable to determine whether physician suspicion of EG poisoning may have increased and, therefore, whether physicians called the poison center more often for similar clinical scenarios than in previous periods.

In the 19 months prior to the first media report of the EG homicide, our poison center handled a mean of one EG suicide case per month (range 0-2, SD=0.69). In the month after the first media report, we identified five EG cases with suicidal intent. Figure 2 reveals the number of EG cases in relation to the media reports discovered in our search of the AJC. During 2004, when the media coverage was most intense, the mean number of EG cases with suicidal intent was 10 per month (range 5-17, SD=3.55). Well-defined clusters of suspected EG suicides appear to correlate closely with the media timeline. The peak number (n=17) of cases per month occurred in May 2004, when the trial was broadcasted on national television.

EG suspected suicide cases were more likely to involve males than females. In 2004, there were 25 cases involving females and 96 involving males. Male suspected-suicide cases also increased more rapidly than females. Teenagers showed the smallest increase in suspected EG suicides over the study period. Among females, suspected EG suicides appear more common in the 40-49 years age group. Most cases occurred in a residential setting, where the site of exposure is recorded. Of those cases during the study period with known outcomes, most cases suffered moderate to severe injury. There was no recognized increase in fatality rate during this period.

DISCUSSION

To our knowledge, this is the first study that has linked media coverage of a murder by poison with an increase in the number of suicide attempts involving the poison. We believe this association is real and cannot be fully explained by other factors. The overall call volume of our poison center did not significantly change during the study period, so the increase does not appear to be secondary to increased poison center penetrance into our region nor better collection of data. Similarly, we are unaware of any reason clinicians would suspect or confirm the diagnosis of EG poisoning more readily during this time period. It also seems unlikely that EG suddenly became more readily available for ingestion. The fact that our number of unintentional cases of EG ingestion did not significantly change supports this view. Examples of

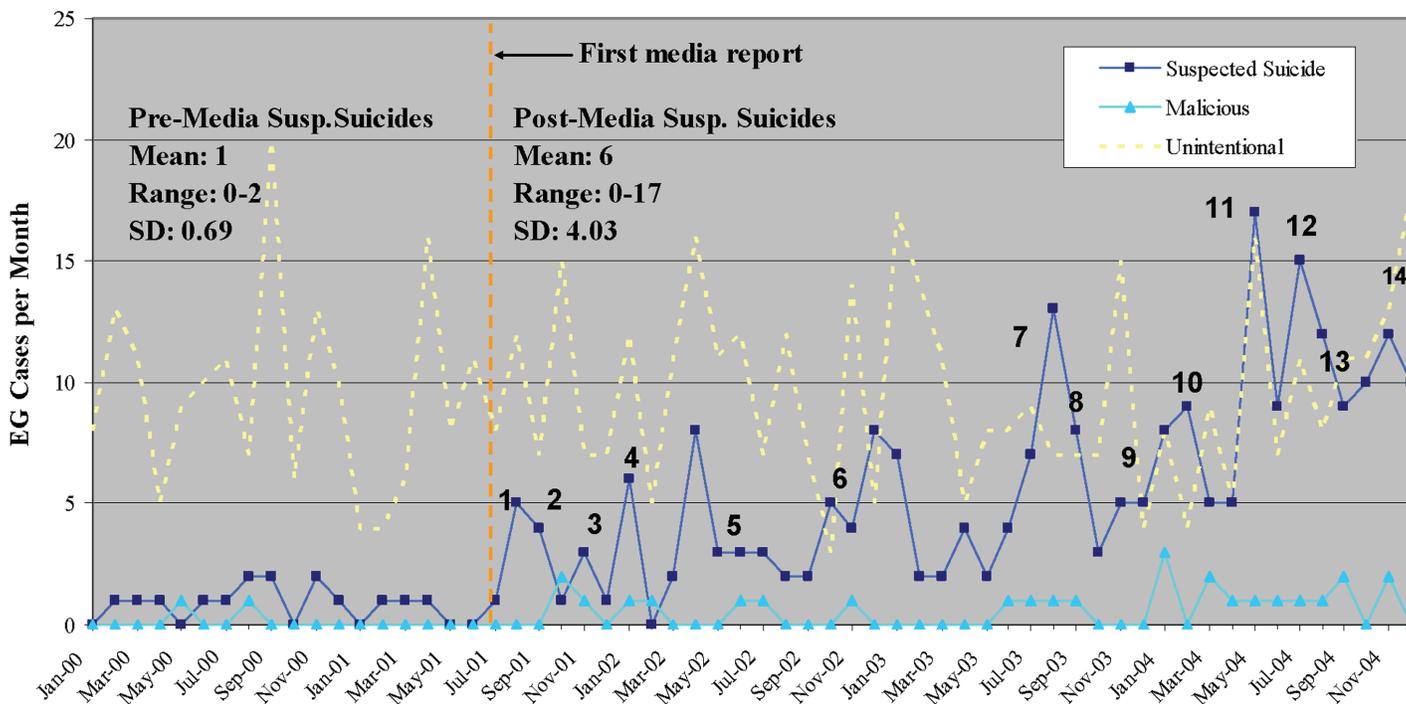


Figure 2. Ethylene glycol (EG) cases per month by intention: 2000-2004.

Media Timeline

- 1 Investigation opened once boyfriend's Jan 2001 death attributed to EG poisoning, husband's body exhumed
- 2 Results show husband's 1995 death due to EG poisoning
- 3 Boyfriend's death ruled homicide; body of 2nd law enforcement officer exhumed
- 4 Lab results show 2nd officer's death not due to EG poisoning
- 5 Husband's 1995 death ruled homicide
- 6 Lynn Turner formally charged with husband's 1995 murder & declared prime suspect in boyfriend's 2001 murder
- 7 Pre-trial hearing; court rules to allow testimony on boyfriend's death because of case similarities
- 8 Court rejects plea to bar testimony on boyfriend's death in husband's murder trial
- 9 Court rejects plea to bar EG lab test results
- 10 Trial begins but change of venue ordered after 62 of 65 jurors questioned said they had heard about the case in pretrial publicity
- 11 Trial broadcast live on national TV; ends with guilty verdict and immediate life sentence
- 12 Investigators question whether deaths of another woman and her former boyfriend were caused by EG poisoning
- 13 Lynn Turner formally charged with boyfriend's murder & faces new charges for falsifying documents for loan
- 14 Prosecutors announce plan to seek death penalty

SD; standard deviation

unintentional exposure would be a toddler who is found mouthing a container with EG or an adult who swallowed a mouthful of EG while siphoning fluid from an automobile radiator.

The GPC is one of 57 poison centers in the United States that belong to the American Association of Poison Control Centers (AAPCC) and uploads its data in near real-time to the National Poison Data System (NPDS).⁶ The AAPCC prepares the NPDS annual report that gives statistics and information on all the poisoning in a calendar year. The outbreak in

Georgia had an effect on NPDS data. In 2000, the Georgia cases of EG ingestion with suicide intent represented less than 3% of all such cases reported to NPDS.⁷ By 2004, the Georgia cases represented 16% of such cases reported to NPDS.⁸

We selected the Atlanta Journal Constitution (AJC) as our media marker, partly because it is the largest newspaper in our state and partly because of the convenience of its online archives searching tool. We do not feel that the EG suicide-intent patients were necessarily getting media information solely from the AJC but rather the AJC reports represent

important points of the murder case that were probably covered at the same time by other media sources, such as newspapers, television and radio.

The number of poison center cases of EG exposures with suspected malicious intent increased from two cases in 2000 to 14 cases in 2004. However, to our knowledge, none of the cases were ever proven to be malicious and likely represented the coding process of an inquisitive or concerned caller. For example, a year ago the poison center received a call from an individual who stated his stepmother killed his father with EG. The case would be coded as an EG exposure with malicious intent, and more than likely the caller would be told if the individual was concerned he/she should contact the proper authorities. So, while the actual number of true malicious poisonings may not have increased, it is still interesting that the number of cases coded this increased; this may represent increased awareness of the lethality of EG from the media coverage. In fact this type of call to a poison control center is consistent with the findings of LoVecchio et al.⁹ who after the 2001 anthrax terrorism deaths reported a substantial increase in the number of possible anthrax exposure calls.

It is unclear what culpability the media has in our outbreak. It is possible that all of the media-influenced EG suicide-intent cases began with depression, and the media reports only influenced the selection of the suicide substance consumed. Some medical toxicologists are reluctant to give media interviews about the latest unusual drug of abuse, for fear that the media report itself with induce others to try the substance. Poison centers often provide public education through the media, but recipients can use this knowledge either to take added precautions or to use as a means of committing further mayhem. The optimal means of public education under such circumstances remain an area for further study.

The media does have an obligation to accurately report the news. Perhaps an attempt could be made not to sensationalize the case or not repetitively name the poison used in murder-by-poison cases. Poison centers should be aware of poisoning events that occur in their region and have a heightened suspicion that future copycat exposures may occur.

Lastly, in 2004 Lynn Turner was convicted of the murder of her husband, followed by a March 2007 murder conviction of her boyfriend. She was sentenced to life in prison without parole. On August 30th, 2010, at the age of 42, Turner was found dead at the Metro State Prison. An autopsy by the state's Chief Medical Examiner indicated Turner died from a toxic amount of her prescribed blood pressure medication, propranolol.

LIMITATIONS

We only used the AJC to represent media reports in our state. Other media sources may not have covered the Lynn Turner EG murder case as closely. Our study was retrospective in nature, so we did not have the opportunity to

prospectively inquire if any of our suicide-intent patients were directly influenced by the Lynn Turner case. Additionally, not all poisonings are reported to the poison centers and many exposures are uncharacterized.

CONCLUSION

Media coverage of stories involving poisonings may result in copycat events, applicable to both self-poisonings and possible malicious poisonings. Poison centers should be aware of this phenomenon, pay attention to local media, and plan accordingly if a poisoning event receives significant media coverage. The media should be more sensitive to the content of their coverage and avoid providing "how-to" poisoning information.

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