



Original communication

Restraint related deaths and excited delirium syndrome in Ontario (2004–2011)



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ABSTRACT

Restraint related death in individuals in excited delirium syndrome (ExDS) is a rare event that has been the subject of controversies for more than 3 decades. The purpose of this retrospective study was to retrieve data on all restraint related deaths (RRD) that occurred in Ontario during an 8-year period and compare them with an earlier study on RRD in ExDS covering the period 1988–1995 in Ontario. The Office of the Chief Coroner of Ontario website was consulted under verdicts and recommendations. The Canadian Legal Information Institute website was used to consult verdict explanations and coroner's summary of evidence. During the period 2004–2011, RRD occurred in 14 individuals in ExDS, a 33% reduction. Psychiatric illness as a cause of ExDS decreased from 57% to 14%. Cocaine was the cause of ExDS in 11 (79%) individuals. The number of RRD following a violent encounter in cocaine-induced ExDS (8) was identical in the 2 periods. RRD occurred in 6 individuals without ExDS following a violent encounter. Final restraint position preceding cardiorespiratory arrest was available in 36% of individuals with ExDS and 83% of individuals without ExDS. In both groups, cardiorespiratory arrests could be classified as immediate or delayed. All 4 individuals without ExDS who had immediate cardiorespiratory arrests were restrained in the prone position. Delayed cardiorespiratory arrest occurred in the non-prone position in both groups. Although many hypotheses may be put forward to explain changes in the epidemiology of RRD in ExDS in Ontario, multiple warnings and recommendations from coroners' inquests cannot be ignored. There is probably not a unique pathophysiological pathway leading to cardiorespiratory arrest in RRD. The death rate in RRD in ExDS is so low that drawing any conclusions based on statistical studies or on isolated case report could be hazardous.

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1. Introduction

Since the publication of Reay et al.,¹ the cause of sudden and unexpected death of individuals restrained for excited delirium syndrome has been a subject of controversy.^{2,3} While respiratory compromise in the prone position has been proposed, suggesting that restraints could play a significant role in these deaths,^{4,5,6} others believed that these deaths were the result of fatal autonomic dysfunction caused by abnormalities in dopamine signaling.^{7,8} Now recognized as a condition requiring rapid medical diagnosis and treatment, it has been suggested that the mortality in ExDS could be lowered if police officers had a pocket card describing the signs and symptoms of ExDS.⁹

Recently, Hall et al.¹⁰ published a study based on multiple data collected in 4 Canadian cities from August 2006 until March 2013.

One of these data was the documentation of “the final resting position of the subject, once physical control had been achieved and while awaiting disposition at the end of the police–public interaction”. As the only death occurred in the non-prone position in an individual presenting “all 10 features of excited delirium”, the authors explained that their results echoed “the earlier findings of Pollanen and other authors that sudden in custody death has more to do with the features of the individual”.

The goal of this study was to re-examine deaths in custody related to restraints in Ontario since the period 1988–1995 used by Pollanen et al.¹¹

2. Methods

Because verdicts and recommendations of coroners' inquests in Ontario are information available to the public, no ethics committee approval was necessary. Through the website of the Office of the Chief Coroner of Ontario (OCCO),¹² verdicts and recommendations

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were consulted. Going backward from the date of the last inquest held in 2014, the names of the deceased were retrieved if the following key words “restraints”, “accident.custody”, “undetermined.custody.police”, “restraint asphyxia”, “accident.police”, “positional asphyxia”, “accident.jail”, “accident.detention center” were found in “Summary”. Then, through the Canadian Legal Institute Information (CanLII) website,¹³ the first name and the last name of the deceased followed by “coroner inquest” was used to have access to verdict explanations and the coroner’s summary of evidence. If verdict explanations and summary of evidence were not found, the OCCO was contacted. The year considered to be the study starting point was the year when the first individual died following the use of restraints. Then, all individuals who died following the use of restraints during an 8 year-span were considered for the study.

3. Results

Between 2004 and 2011, 20 coroner inquests were held following the use of restraints in Ontario. All individuals were men. The mean age was 35 years (SD 8.6). All deaths occurred in custody. Signs and symptoms of ExDS resulting from drug-induced psychosis or psychiatric illness were present in 14 (70%) individuals. Six (6) individuals were not in ExDS (Fig. 1, Fig. 2, Fig. 3).

In 11 (79%) individuals with ExDS, a violent physical encounter occurred with police officers. Loss of consciousness followed by cardiorespiratory arrest was immediately noticed in 5 individuals once handcuffs were in place. The other 6 individuals were still conscious after the application of handcuffs and unexpected cardiorespiratory arrest occurred following a bout of continuous fighting and struggling against restraints. In 3 (21%) individuals with cocaine-induced ExDS, minimal use of force was reported. One was a “body packer” who died from an acute cocaine overdose. In the other 2 individuals, “acute cocaine intoxication” or “cocaine poisoning” was mentioned in the summary but cocaine blood levels were not available. In individuals with ExDS, cardiovascular disease was mentioned in 4 individuals (29%). Conducted electrical weapon (CEW) was used in 5 individuals. Stun mode was briefly effective in

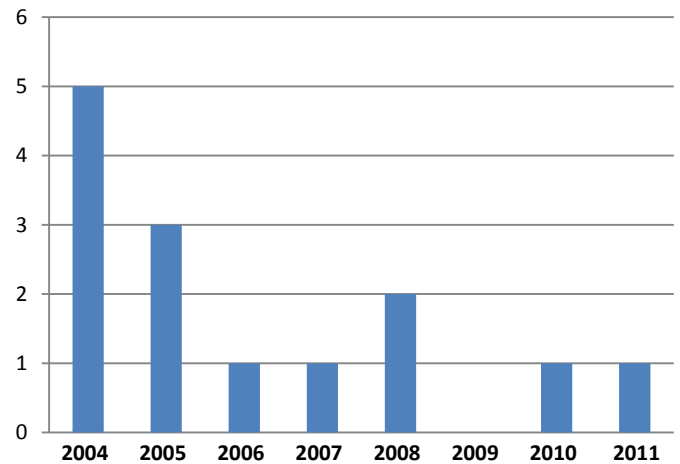


Fig. 2. Restraint related deaths associated with ExDS in Ontario (2004–2011).

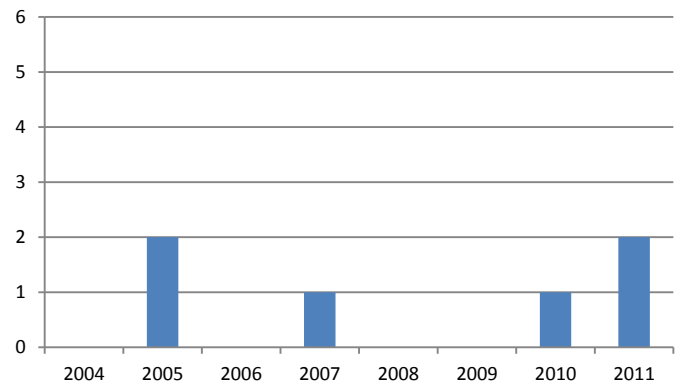
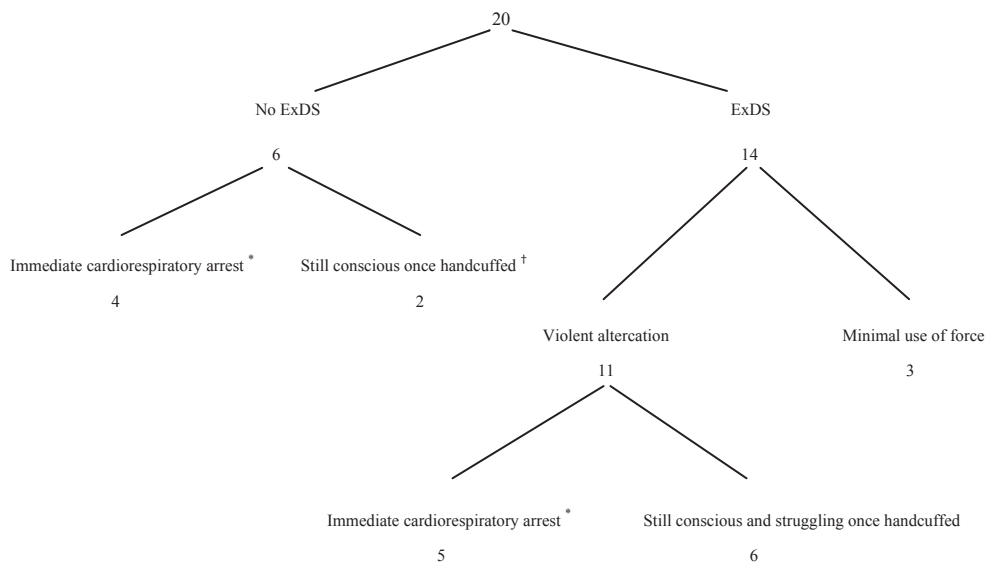


Fig. 3. Restraint related deaths in individuals without ExDS in Ontario (2004–2011).



* Unconsciousness observed immediately following the application of handcuffs.

† Still conscious but immediate breathing difficulties leading very rapidly to cardiorespiratory arrest.

Fig. 1. Sudden and unexpected deaths following restraints in Ontario (2004–2011).

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