G66 Methadone-Related Deaths in Palm Beach County

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The goals of this presentation are to examine the role of methadone in drug-related deaths in Palm Beach County from 1998 to 2002.

Methadone is a long acting oral opioid agonist used therapeutically to treat opiate dependency and in the management of chronic pain. Recent media accounts of an increase in the number of deaths attributed to methadone toxicity in Palm Beach County, FL, particularly among teenagers, have raised public concern over the illicit use of the drug. The authors examined cases investigated by the Palm Beach County Medical Examiner's Office over the period from 1998 to 2002 in which postmortem toxicologic studies indicated the presence of methadone, to examine the role of the drug in these deaths. The reports of the postmortem examinations and toxicologic studies and the investigative reports were reviewed.

Identified were 70 methadone-positive cases. There was a dramatic increase in the number of cases during the period, from 2 cases in 1998 to 37 cases in 2001 and 18 cases in the first quarter of 2002. The cases included 57 males and 13 females. Ages ranged from 16 to 72 years (mean 37.1 years). All decedents were white except for one black male. Methadone had been prescribed for chronic pain to 16 of the decedents. There were no cases in which the decedent was known to be enrolled in a methadone maintenance program.

The methadone-positive cases included 57 in which the death was classified as an accident due to drug toxicity. In 12 of these cases the cause of death was attributed to methadone toxicity alone and in 35 cases methadone was identified as contributing in combined drug toxicity. Non-toxic levels of other drugs were present in 9 of the methadone toxicity cases. Cocaine and/or cocaine metabolites were identified in 27 of the 36 cases of combined drug toxicity, morphine in 9 (5/9 with 6MAM), oxycodone in 8 and ethanol in 8, with blood alcohol levels ranging from 0.024-0.183 G/dL (mean 0.095 G/dL). In 23 deaths methadone was detected but was considered to be an incidental finding. These included 9 deaths attributed to other drugs and 13 to non-drug related causes (5 natural, 3 suicide, 4 accident due to trauma, and 1 undetermined gunshot wound). Methadone was detected only in the urine in six cases.

There was considerable overlap in the postmortem blood methadone levels among the groups. Levels ranged from .114-.984 mg/L (mean .430 mg/L) in cases where death was attributed to methadone toxicity; trace-1.243 mg/L (mean .331 mg/L) in cases of combined drug toxicity; .069-.664 (mean .242 mg/L) in deaths attributed to other drugs; and .072-.782 mg/L (mean .303 mg/L) among non-drug related deaths.

Data indicates that most deaths in which methadone plays a role are due to the use of the drug in conjunction with other prescription or illicit drugs. Establishing the role of methadone in these cases can be difficult in light of the other drugs present. The levels of methadone detected in these cases indicate that it may not be possible to determine what constitutes a lethal methadone range since the majority of cases involved drug interactions and since individuals may have different levels of susceptibility and/or tolerance. However, the data demonstrate that death can occur at methadone levels below the previously reported lethal ranges. Determination of the cause of death in methadone-positive cases necessitates correlation of the postmortem toxicologic results with autopsy results and investigative findings.

It is possible that the increase in methadone-related deaths may be in part due to more physicians prescribing the drug in light of the recent recognition of the hazards of other analgesics such as oxycodone. Street users of methadone may be unaware of its long half-life, with frequent use resulting in its accumulation to dangerous levels.

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