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Intoxication — Suicide or not?

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Summary: It is often impossible to decide whether a death due to poisoning with drugs and/or alcohol is accidental or intentional. In 1965 WHO introduced the category "uncertain cases of death" in the official statistics. The number of cases in this category has increased and constitutes at present in Sweden between 30 and 70 per cent of the total number of suicides. In Malmö (1972-1973) most of these deaths were due to lethal poisoning with drugs and/or alcohol. When discussing suicidal rates it is important to include those cases.

Zusammenfassung: Es ist oft unmöglich zu entscheiden, ob ein Todesfall als Folge einer Vergiftung mit Arzneimitteln und/oder Alkohol als ein Unfall oder als beabsichtigt anzusehen ist. Die Weltgesundheitsorganisation führte 1965 in die offizielle Statistik eine Kategorie "unklare Todesfälle" ein. Die Anzahl der Fälle dieser Kategorie ist gestiegen und liegt heute in Schweden zwischen 30 und 70 % der Anzahl der Selbstmorde. In Malmö waren 1972/73 die meisten dieser Todesfälle die Folge von Vergiftungen mit Arzneimitteln und/oder Alkohol. Bei der Diskussion der Häufigkeit von Selbstmorden ist es wesentlich, diese Fälle mit einzubeziehen.

Key words: Suicide, intoxication - uncertain cases of death

INTRODUCTION

Recent investigations have shown an increase in the frequency of intoxications with drugs and deaths caused by such intoxication (BOLANDER 1972, STENGEL 1972, VEDIN *et al.* 1972).

Classification of these deaths offers difficulties, especially whether a given case should be considered suicide or not.

Intoxication as a cause of death is readily missed. This is true especially in those cases where autopsy is not included in the investigation of the cause of death since police inquiries often give no evidence of poisoning.

The autopsy frequency in Malmö in 1972 and 1973 was 93 per cent. The possibility of detecting and studying cases of fatal poisoning is therefore particularly good in this area.

MATERIAL AND METHODS

In 1972 and 1973 all together 5.360 deaths occurred in Malmö. 3.786 of hospital fatalities were examined at the department of pathology; 1.101 of persons who had died outside hospital at the department of forensic medicine; 85 who had died at other hospitals or institutions outside Malmö; 388 were not examined. Thus, 93 per cent of all the persons who had died were examined post mortem.

Of the 245 persons who had died from poisoning, 242 were examined post mortem at the department of forensic medicine and the remaining 3 at the department of pathology. The data on which the present investigation is based were extracted from autopsy protocols and police reports and, when available, hospital records.

For the sake of simplicity 15 deaths classified as accidental were not included. The distribution of these cases is given below.

Table 1. *Total number of deaths, classified as accidents in Malmö 1972-73, were poisoning was demonstrated*

	male	female
Tablets + alcohol	1	
Coal gas		2
Burning	1	
Drowning	3	
Jump/fall	5	
Traffic accident	2	1
Total	12	3

RESULTS

1. Deaths classified as suicide

There were all together 141 deaths classified as suicide (87 men, 54 women), which means 2.7 per cent of the entire number of deaths in Malmö in 1972 and 1973 or a frequency of 27 per 100.000 inhabitans per year (population 259.000 inhabitants).

The largest group consisted of persons who had hanged themselves (Fig. 1). Fatal poisoning with tablets and/or alcohol was noted in 39 per cent of the cases classified as suicide. In 97 cases (69 per cent) rests of drugs and/or alcohol were found at autopsy.

2. Deaths classified as uncertain

104 cases (80 men, 24 women) were classified as uncertain, *i.e.* "doubtful whether an accident had occurred". Intoxications with tablets + alcohol and alcohol alone are most frequent.

The total number of unnatural deaths, classified as suicide or uncertain was 245 (167 men, 78 women), which means 4.7 per cent of the total number of deaths in Malmö in 1972 and 1973, or a frequency of 48 per 100.000 inhabitants.

3. Deaths from poisoning

The total number of deaths from poisoning or where poisoning was considered a contributory cause was 203 (Fig. 1).

The distribution of the drugs found at chemical examination is given in Table 2. Derivatives of barbituric acid constitute the largest group and were demonstrated in all together 82 cases including 33 combined with other preparations. Substances containing methaqualon were demonstrated in 17 cases; Propandiol derivated (meprobamat) in 20 and dextropropoxiphene containing analgetics in 18 cases.

Alcohol was the commonest finding in toxicological-chemical analysis in our material. It was demonstrated in 123 cases, including 71 in which it was seen in association with some other substances.

As seen from Fig. 1 intoxication was demonstrated in 96 of the 104 uncertain cases.

In the 3 uncertain deaths from burning toxicologico-chemical analysis showed intoxication with trichloretylen. 6 cases classified as suicide and 1 as uncertain were due to intoxication with CO.

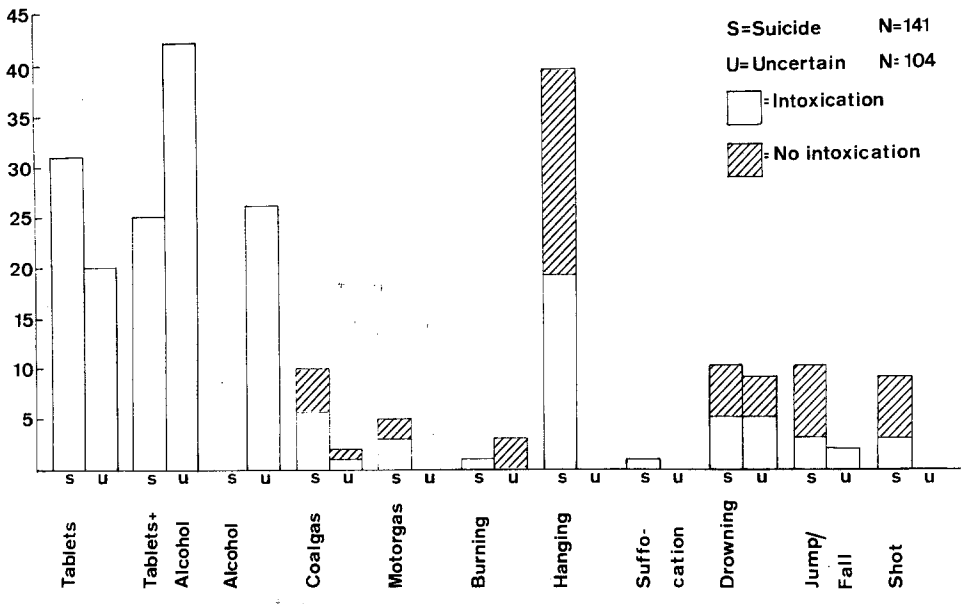

Fig. 1. Classification of uncertain cases and suicides in respect of mode of death and intoxication with tablets and/or alcohol (N = 245) Malmö 1972-73

Table 2. *Drugs found at toxicologicc-chemical examination in 141 deaths from poisoning. Alcohol, trichloretylen and Co not included*

Barbiturates		49
Piperidindion derivates		1
Propandiol derivates		6
OTHER HYPNOTICS		
Methaqualon		11
Hexapropymat		2
Alcohols and Chloraldehydes		2
Phentiazin derivates		4
Tricyclic amines		4
Analgetics		14
COMBINATIONS		
Barbiturates	+ Piperidindion	1
"	+ Propandiol	10
"	+ Methaqualon	3
"	+ Hexapropymat	1
"	+ Bensodiazepin	4
"	+ Analgetics	9
"	+ Other combinations	5
Propandiol	+ Tricyclic amines	1
Methaqualon	+ Alc. and Chlorald.	1
"	+ Bensodiazepin	1
Muscle relaxants	+ Phentiazin	1
Analgetics	+ Methaqualon	1
"	+ Hexapropymat	3
"	+ Bensodiazepin	1
"	+ Tricyclic amines	1
Bensodiazepin	+ Tricyclic amines	1
Others		4
		141

DISCUSSION

In the literature on suicide the term suicide is rarely defined. To find a definition is not difficult; Internationally accepted is: "a death, self inflicted with an intention to die". The problem, however, is to find a definition that can be applied in practice.

The criteria used for classification of a case of poisoning as suicide are: letter left by victim, known depression, earlier attempted suicide, knowledge that the bictim had shortly before death stated hat he was tired of life plus postmortem chemical demonstration of extremely large amounts of the toxic substance.

A letter left behind by the victim is the commonest evidence justifying classification of a death as suicide. But such evidence alone cannot be regarded as proof that the individual had intentionally taken his life. STENGEL

stresses the appeal character of every self-inflicted injury. This means that attempted suicide may be regarded as an endeavour to improve human relationships rather than a wish to take ones life; an attempt to attract the attention of other people, when other means have proved unsuccessful. A farewell letter is then only evidence of such an appeal element. This line of thought can also explain why suicide is often preceded by a threat to take ones life, and why some individuals make repeated suicidal attempts.

It has previously been pointed out (BOLANDER 1967, ETTLINGER 1964, STENGEL 1972, DALGAARD 1973) that comparisons between suicide rates of different countries are unreliable. In an investigation in 1973 by DALGAARD the records and protocols of a number of suicide-suspected deaths were examined and classified independently by 5 Danish coroners (embedslaeger) and 2 English coroners. The classification of the cases varied not only with the nationality of the examiners but also between examiners of the same nationality.

Such variation may also be exemplified by comparison of the figures of Malmö and Stockholm.

The figures have been extracted from the National Central Bureau of Statistics, Causes of Death 1969, 1970, 1971 and are given as percentages of the total number of deaths in the respective areas.

	Stockholm	Malmö	Entire country
Frequency of suicide	3.5	2.5	2.1
Uncertain cases	0.4	1.2	0.4
Accidents	4.3	3.5	4.2

As shown in the table the frequency of suicide in Stockholm was higher than in Malmö with a correspondingly lower frequency of uncertain cases. This difference is probably due to differences in the application of the conventional criteria for a diagnosis of suicide.

Establishment of a diagnosis of suicide is most difficult in cases of fatal poisoning. STENGEL (1972) has drawn attention to this problem. He stated that the reported frequency of suicide in England was decreasing while the frequency of cases of intoxication was increasing. He also feels that fatal poisoning probably occurs among the uncertain cases because intentional fatal poisoning can most easily masquerade as an accident. This assumption is supported in this material. Poisoning was the direct or contributory cause of 203 deaths in Malmö in the years 1972 and 1973. In all together 141 cases the cause of death was poisoning with analgetics, psychopharmaceutics, psychopharmacological drugs,

sedatives with or without alcohol. Of these 88 (62 per cent) were classified as uncertain. Of the totally 104 uncertain cases the remaining 16 are given below.

	with demonstrable intoxication (alcohol, trichlorethylene)	without such intoxication
Coal cas	1	1
Burning	3	-
Drowning	5	4
Jump/fall	2	-

In only 5 of the 104 uncertain cases could no evidence of poisoning be demonstrated.

In the discussion of suicide it should be borne in mind that an unitary accepted operational definition does not exist. Before the marked increase in frequency of deaths from poisoning this offered no problem in classification because the procedure was in itself a sufficient criterion to classify a death as suicide.

In 1965 WHO introduced the category "uncertain causes of death" in the official statistics. To this category were assigned deaths in which it could not be decided whether they were accidental or suicidal. The mean frequency of cases in this group in Sweden today is about 30 per cent of the total number of deaths classified as suicide in Malmö (1972-73) some 70 per cent. In Malmö nearly all the uncertain cases were deaths from poisoning with drugs and/or alcohol (Fig. 1).

The ratio between uncertain cases of death and suicide varies with cultural, religious, political and medico-legal differences between the countries. Differences are found also within countries owing to differences in the local application of the criteria used. It is probably impossible to draw a clearout border between the groups.

Under these circumstances it must be questioned whether one can speak of true frequencies of suicides. Uncertain deaths and suicide must be reported side by side if the material is to be compared with others and valued correctly.

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