

New approach to suicides among the elderly

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Abstract: Suicidal attempts among the elderly constitute up to 5% of the total number of suicidal attempts. Many biological, psychological and sociological factors contribute to suicidal reactions, especially among the older generation. The authors performed clinical and toxicological analysis of acute poisonings among the elderly population, inhabitants of urban and rural areas, provided with inpatient treatment in the Toxicology Clinic at the Institute of Agricultural Medicine in Lublin during the period 1999-2005. The study was expanded by psychological-psychiatric examination of the attitudes of people who had undertaken a suicidal attempt. The causes of suicidal poisonings were mainly psychotropic drugs, sometimes in combination with ethyl alcohol. The most frequent motivation was depression preceding poisoning, as well as conflict situations in a family, at home, and in the environment. In the presented material concerning suicidal attempts among the elderly, psychosomatic diseases were dominant, both in rural and urban environments of the region.

Key words: suicides at elderly age, acute poisonings, motivation, clinical course of poisoning

INTRODUCTION

Ageing is a natural, long-term and irreversible process, taking place in the individual development, which inevitably leads to the limitation of efficiency of many organs and systems. This process requires becoming aware that this is a natural part of life, which is a value possessed by Man [1, 2].

Suicidal attempts among the elderly – according to many authors – constitute up to 5% of the total number of suicidal attempts. The deteriorating economic situation of Polish seniors – both in rural and urban areas – does not play the primary role in the frequency of suicides committed. In this social group – as indicated by many reports – suicidal attempts undertaken by the elderly are preceded by depression and age-related organic changes within body organs and systems [3-6].

Many biological, psychological and sociological factors contribute to suicidal reactions, especially among the older generation. The following factors are commonly considered as autodestructive behaviour factors: depressions of high intensity, widowhood, divorce, loneliness, poor material standard and loss of sources of maintenance, inability to count on assistance from others, social non-adjustment, chronic somatic diseases, personality disorders and alcohol abuse [2, 4, 7-9].

An inspiration to undertake studies concerning the motivation for acute poisonings in the group of elderly people is the varied socio-economic situation of Polish urban and rural inhabitants, resulting from current social and economic transformations in the era of free market economy, which has been implemented in Poland for more than ten years.

OBJECTIVE

The objective of the presented study was clinical and toxicological analysis of acute poisonings among the elderly population, inhabitants of urban and rural areas, provided

with inpatient treatment in the Toxicology Clinic at the Institute of Agricultural Medicine in Lublin.

The study was expanded by an evaluation of suicidal attitudes of people who had undertaken a suicidal attempt, with the consideration of psychological-psychiatric examination performed in all patients after they had regained consciousness, as well as in those who reported for catamnestic examination to the Outpatient Department for Treatment of Neuroses at the Institute after an acute poisoning.

MATERIAL AND METHODS

The material for the study were medical records, both clinical and ambulatory, from the outpatient consultation room for internal diseases and toxicology, concerning patients treated in the Toxicology Ward at the Institute's Clinic due to acute poisoning by various xenobiotics in 1999-2005.

Suicidal poisonings among the elderly population were analysed from the aspect of patients who were poisoned accidentally, by overusing drugs or solvents, or were poisoned in occupational conditions.

Among 1,227 patients hospitalized during the period of the study, a group of 224 elderly was selected for further analysis, which constituted 1/5 of the total number of patients hospitalized due to suicidal attempts by consumption of various xenobiotics.

By means of the Bayer Express Plus biochemical analyser, biochemical markers of organic changes in the course of acute poisoning were determined many times in body fluids during the course of hospitalization. Xenobiotics, which were the cause of poisonings, were determined by the methods generally accepted in toxicological practice.

The results of the study were statistically analysed, and presented in the form of tables and graphs.

RESULTS

Among the cases of acute poisonings analysed, the group of 224 elderly constituted 1/5 of the total number of patients

Table 1 General characteristics of the group of the elderly in the study.

Place of residence	Mean age ($\bar{X} \pm SD$)	No. of patients							
		Gender		Motivation for acute poisoning			Marital status		
		MM	FF	Suicidal	accidental	occupational	married	widowed	never-married, divorced
Urban area (n = 150)	58.78 ± 8.8	83	67	75	74	1	86	36	28
Rural area (n = 74)	65.80 ± 7.9	50	24	37	28	9	55	10	9
Total (n = 224)	62.19 ± 6.4	133	91	112	102	10	141	46	37
		59%	41%	50%	46%	4%	62%	21%	17%

Table 2 Characteristics of the elderly with suicidal motivation for poisoning.

Place of residence	Age ($\bar{X} \pm SD$)	Gender		Marital status			Source of maintenance			
		MM	FF	Married	widowed	divorced benefit	health pension	old-age activity	Occupational	unemployed
Urban area (n = 72)	58.02 ± 6.74	31	41	42	16	14	33	17	14	8
rural area (n = 40)	60.08 ± 9.15	25	15	23	11	6	7	8	20	5
Total (n = 112)		56	56	65	27	20	40	25	34	13
		50%	50%	58%	24%	18%	36%	22%	30%	12%

hospitalized in the Toxicology Ward (Table 1). The cause of inpatient treatment was mainly a suicidal attempt – 50%, followed by accidental poisoning – 46%, and occupational poisoning.

The group of elderly people who had undertaken a suicide attempt (Table 2) included both males and females of various marital status, who maintained themselves on various sources of finance.

Suicidal attempts were undertaken by the consumption of a considerable amount of drugs (Table 3) or drugs with combination with alcohol. As many as 1/5 of those poisoned undertook repeat suicide attempts.

Table 3 Xenobiotics as the cause of suicidal attempts among the elderly.

	Causative agent of acute poisoning	No. of patients
Drugs	Benzodiazepines, phenothiazine derivatives, neuroleptics, tricyclic antidepressive drugs, other drugs	66
Drugs in combination with alcohol	level of ethyl alcohol in blood of the patients poisoned (%) $\bar{X} \pm SD = 2.03 \pm 0.67$	38
Other substances	Carbon monoxide, pesticides, organic solvents, irritating and caustic compounds, mushroom, other xenobiotics	8
Total		112

In the group examined, 22 patients had undertaken a repeat suicide attempt – 1/5 of the number of suicides – seniors' recidivism.

A considerable number of patients admitted to the ward were in the state of toxic coma associated with the consumption of xenobiotics (Table 4) of various degrees of intensity. These patients constituted 1/5 of the people examined.

According to the assessment by a psychologist-psychiatrist (Table 5) the cause of poisoning were depression states, which were dominant, as well as neurotic situational reaction experienced by patients during the period preceding a suicide attempt.

Table 4 Depth of toxic coma in poisonings.

Place of residence	Conscious patients	Degree of coma acc. to classification by Matthew and Lawson			
		I°	II°	III°	IV°
urban area (n = 79)	27	2	23	20	7
rural area (n = 137)	18	15	38	52	14
Total (n = 216)	45	17	61	72	21
	21%	8%	28%	33%	10%

Table 5 Suicide attempts among the elderly according to assessment by a psychologist-psychiatrist.

Cause preceding poisoning	No. of patients with pathology			
	urban area (n = 72)	rural area (n = 40)	Total (n = 112)	%
Neurotic situational reaction	13	10	23	21%
Exogenous and endogenous depression	23	9	32	29%
Psychopathy, schizophrenia	7	1	8	7%
Psychoorganic syndrome	9	5	14	13%
Addiction to alcohol	14	11	25	22%
Toxicomania and other causes of suicide	6	4	10	9%

DISCUSSION

Based on the comprehensive material concerning 1,227 patients hospitalized due to acute poisoning in the Toxicology Ward at the Institute's Clinic, a group of 224 elderly patients of both genders were selected for clinical-toxicological evaluation of causes and consequences of acute poisonings among rural and urban inhabitants.

Many patients in the study suffered from chronic somatic diseases, such as diabetes (16 patients), ischemic heart disease (12), hypertensive disease (28), and alcoholism (18). Similar observations were made by other authors [4].

In many patients, organ changes of a character of enzymatic and toxic liver lesions were noted, as well as toxic lesions of the kidneys – especially in the group of patients intoxicated with alcohol in combination with drugs, also mushroom, solvents and non-commercial alcohol. In these patients, the prognosis was serious and they required a longer hospitalization period. Similar observations have been made by other researchers [5, 6, 10, 11].

In the group examined, males prevailed – both rural and urban inhabitants – who had undertaken an attempted suicide or were poisoned accidentally, which is undoubtedly related with a higher consumption of alcohol by males.

The number of occupational poisonings was the smallest, and occurred mainly among rural inhabitants.

In the collected material concerning acute poisonings there dominated people who were married, from both rural and urban areas, whereas poisonings were most rare among those widowed, single or divorced. Our observations are consistent with the reports by other researchers.

A large group constituted patients in the state of toxic coma, the degree of which was life threatening, and every 10th patient, on average, required intubation and assisted ventilation. In these patients the prognosis was serious. A very high statistical relationship in the depth of toxic coma was noted among rural and urban patients, with the lack of a statistical relationship according to the stages of coma ($p = 0.205$).

While analysing the group of suicides it should be stated that among rural inhabitants males prevailed, while among the urban population females dominated ($p = 0.0003$).

In both groups analysed, people of both genders who were married undertook suicide attempts more frequently than those who were widowed and divorced ($p = 0.042$).

Among urban inhabitants, the great majority maintained themselves on health benefit or old-age pension, whereas an opposite situation was observed among rural inhabitants, where the majority, despite old age, were occupationally active on farms.

The main cause of suicidal poisonings were drugs and therapeutic preparations, sometimes in combination with alcohol, often home made, which deteriorated prognosis and prolonged the period of hospitalization in the Clinic. A similar distribution was noted by other researchers [2-4].

In mixed poisonings, a high level of alcoholemia – close to the second stage of alcohol intoxication – was also a high risk factor in poisonings, especially among people suffering from somatic or sometimes metabolic diseases prior to poisoning.

In psychiatric assessment, depression was dominant as the cause of acute poisoning, which was consistent with the observations by other authors [7]. The subsequent cause of poisonings were various types of sudden reactions to everyday life situations, followed by alcoholism and alcohol consumed in combination with drugs [2, 3].

Organ changes, so-called psychoorganic syndromes- are the cause and accompany the subsequent suicide attempts at old age, which is also reported by other researchers [4].

Suicide attempts among the elderly in the course of psychiatric diseases and toxicomania were relatively few, which is undoubtedly associated with the character of these diseases and their course.

Clinical observations concerning the course and recovery from acute poisonings – especially suicidal – among the elderly are similar to those reported by other authors in Polish and international literature [2, 7, 8].

Despite expectations, it is not the socio-economic situation but psychosomatic disorders that are the cause of undertaking attempts of poisonings – sometimes suicidal – threatening the health and life of patients.

CONCLUSIONS

Acute poisonings among the elderly in the presented study material constituted 1/6 of the total number of the patients hospitalized – both among urban (prevailing) and rural inhabitants. The causes of hospitalization were mainly psychotropic drugs, sometimes in combination with alcohol, which deteriorated the prognosis. The most frequent motivation for suicidal poisonings was depression preceding poisoning, as well as conflict situations in a family, at home, and in the environment – evaluated as a situational neurotic reaction on the background of sociological, psychological and biological causes among elderly urban and rural inhabitants. The course of some acute poisonings was moderate to severe, and the prognosis serious, especially in people with somatic diseases. These patients required intensive care, especially during the period of a toxic coma and during convalescence. In the presented material concerning suicidal attempts among the elderly, the poor economic status of patients was not – as could be expected – the primary cause, similar to the marital status of the elderly. Psychosomatic diseases were dominant, both in rural and urban environments of habitation of the people poisoned.

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