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COMPARATIVE STUDY ON CONDITIONS OF INTOXICATION IN PATIENTS RECEIVED IN „CLINICAL HOSPITAL“ SHTIP

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Abstract: Introduction: According to the WHO, about 800,000 cases of suicide are registered annually in underdeveloped and developing countries. Suicide is a serious global and health problem, a hidden and silent epidemic, which has many triggers: psychiatric illness and mental disorders, broken emotional ties, economic difficulties.

Aim: According to the fact that suicides are a serious and global health problem, through this study we want to show the number of patients who asked for help in the emergency department at „Clinical Hospital“ Shtip due to intoxication with emphasis on the motive for the poisoning.

Materials and methods: This comparative study uses data for the period from 01.01.2016 to 31.12.2019 taken from the archives of the Department of Internal Medicine using descriptive and retrospective epidemiological method.

Results: The number of patients who asked for help due to intoxication for this period was 415, of which as many as 375 (90,36%) had suicidal intentions. Of the total number of patients, 225 (54,22%) were men and 190 (45,78%) were women. Suicidal intentions were recorded more in men 199 (53,07%) cases, while in women there were 176 (46,93%) cases. Regarding the age group, the following results were obtained: 32 (7,73%) of all admitted were aged <18 years, 127 (30,68%) aged 19-29 years, 95 (22,95%) of aged 30-39 years, 56 (13,53%) were aged 40-49 years, 45 (10,87%) were aged 50-59 years, and 59 (14,25%) were patients older than 60 years. The obtained data show insignificantly higher number of drug intoxications 153 (36,78%) compared to alcohol intoxications 142 (34,13%). 90 (21,63%) cases were due to chemical intoxication, and 21 (5,05%) of the patients used multiple means of intoxication. According to the season of the examination, highest number of poisonings were registered in the winter 119 (28,54%), then 115 (27,58%) in summer, 104 (24,94%) in autumn, and the least in spring 79 (18,94%). In terms of place the patients come from, the number of patients from urban areas or 357 (86,02%) is significantly higher than the number of patients from rural areas or 58 (13,98%). Association with psychological and psychiatric conditions was recorded in 53 (11,32%) cases. Because 27 (6,11%) of the total number of cases were urgent, they were referred to the University Clinic of Toxicology in Skopje, and the remaining 388 (93,89%) were treated in the „Clinical Hospital“ Shtip. Only 3 (0,72%) of the total number of poisonings ended in death.

Conclusion: Our results showed a significantly increased number of suicidal compared to accidental poisonings. Therefore, it is necessary to take preventive measures to prevent suicidal poisoning. Suicides can be prevented at least in part by restricting access to suicidal ideation, by training primary care physicians and health professionals to identify people at risk, and by reducing the rate of depression.

Keywords: intoxication, suicide, alcohol, drugs

1. INTRODUCTION

As a result of the dynamic way of life, daily we are exposed to stress and stressful conditions that disrupt the normal homeostasis in the body and lead to serious mental and physical disorders. According to the WHO, about 800 000 cases of suicide are registered worldwide each year, 78% of which are in underdeveloped and developing countries. Suicide attempt is 30 times more common than suicide, and is an important predictor factor when it comes to suicide. (1)

Suicide is a serious global and health problem, a hidden and silent epidemic, which has many triggers: psychiatric illness and mental disorders, broken emotional ties, economic difficulties. (2)

Globally, in 2017, 1,4% of deaths were from suicide. There is a significant difference in different countries around the world. Thus, most cases, 7,21% were registered in Greenland, 5% of deaths in South Korea in 2017 were from suicide, 3,9% in Qatar, 3,6% in Sri Lanka, USA and Canada with 1,7% and 1,65% respectively, Greece with 0,4%, Indonesia with 0,5%. (3)

2. AIM

According to the fact that suicides are a serious and global health problem (2), through this study we want to show the number of patients who sought help in the emergency department at „Clinical Hospital“ Shtip due to intoxication with emphasis on the motive for the poisoning.

3. MATERIALS AND METHODS

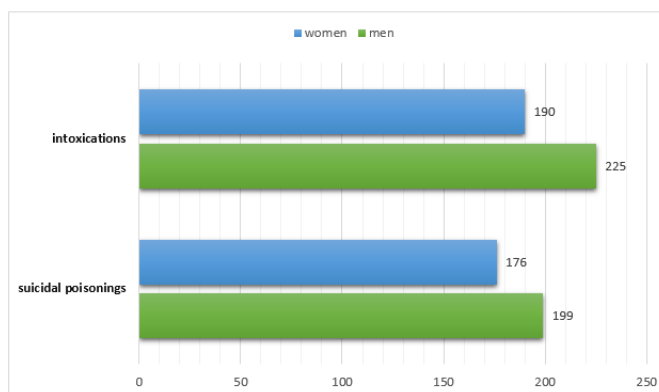
This comparative study uses data for the period from 01.01.2016 to 31.12.2019 taken from the archive of the department of internal medicine at „Clinical Hospital“ Shtip. A descriptive and retrospective epidemiological method was used during this research.

4. RESULTS

The obtained results refer to the number of hospitalized and outpatient treated patients at the Department of Internal Medicine at Clinical Hospital Shtip. All data were systematized according to the following variables of interest: sex, age group, motive for intoxication, means of intoxication, distribution of patients by seasons, place of residence, association with psychological and psychiatric disorders, transfer of patients to a higher institution, and outcome of poisoning.

The number of patients who sought help due to intoxication for this period is 415, of which as many as 375 (90,36%) had suicidal intentions. Of the total numbers of patients, 225 (54,22%) were men and 190 (45,78%) were women. Suicidal intentions were recorder more in men 199 (53,07%) cases, while in women there were 176 (46,93%) cases. (Figure 1)

Figure 1. Overview of the total number of intoxications and the number of suicidal poisonings in men versus women



Regarding the age group, the following results were obtained: 32 (7,73%) of all admitted aged <18 years, 127 (30,68%) aged 19-29 years, 95 (22,95%) of aged 30-39 years, 56 (13,53%) were aged 40-49 years, 45 (10,87%) were aged 50-59 years, and 59 (14,25%) were patients older than 60 years. According to these data, the highest number of poisonings is in the young population, and it is inversely proportional to the above age groups. (Figure 2 and 3)

Figure 2. Overview of the number of poisonings by age group

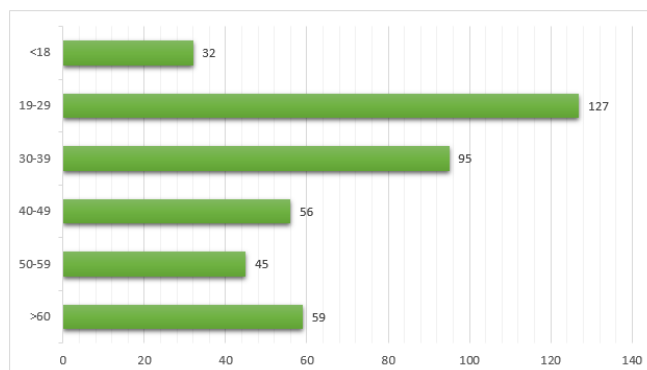
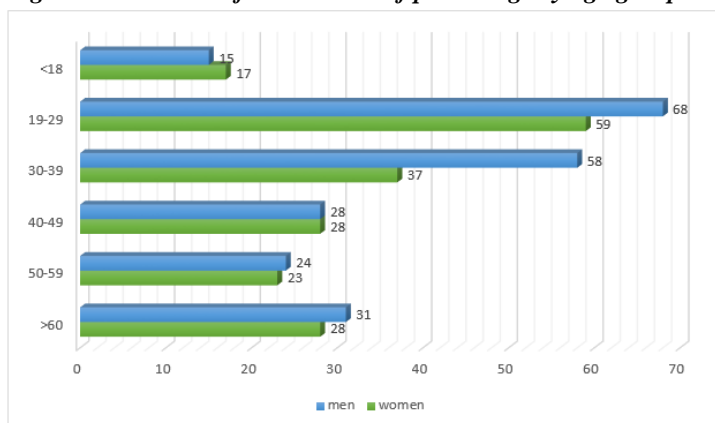


Figure 3. Overview of the number of poisonings by age group and sex



The most common route of entry of the toxic substance into the body is orally by ingestion, and by inhalation. According to the variable means of intoxication, we divided all the data into four groups: intoxications due to drug abuse, alcohol abuse, intoxications with chemical agents, and intoxications where there is a combination of several means. The obtained results show insignificantly higher number of drug intoxications 153 (36,78%) compared to alcohol intoxications 142 (34,13%). 90 (21,63%) cases were due to chemical intoxication, and 21 (5,05%) of the patients used multiple means of intoxication. Out of the total number of poisonings, 10 (2,40%) are poisonings by other means, i.e. mushroom poisonings, bites from poisonous animals. The most commonly used drugs are: anxiolytics, hypnotics, antipsychotics, diuretics, beta blockers, ACE inhibitors, NSAIDs. Chemical poisoning includes gaseous intoxications such as CO₂, CO, pesticides, detergents and household detergents, corrosive agents. And no less significant are the combined poisonings, with the misuse of multiple means such as alcohol and drugs. (Figure 4)

According to the season of reporting, the most poisonings were reported in the winter period (December to February) 119 (28, 54%), the 115 (27,58%) in summer (June to August), 104 (24,94%) were in autumn (September to November), and at least in spring (March to May) i.e. 79 (18,94%). (Figure 5)

Figure 4. Overview of the number of the means of intoxication

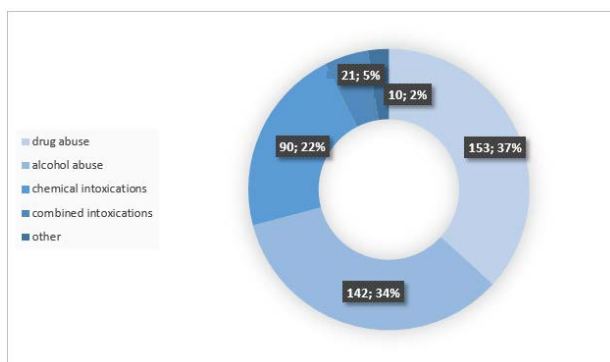
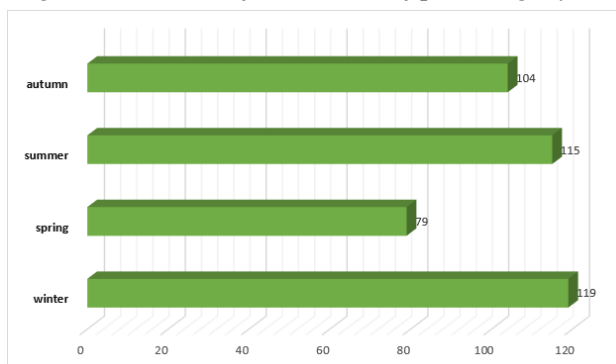
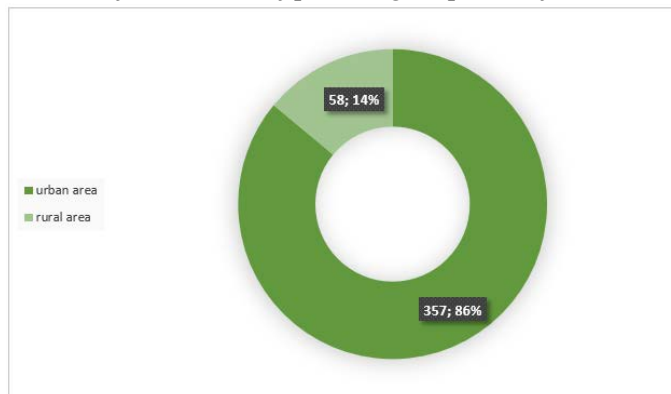


Figure 5. Overview of the number of poisonings by seasons



In terms of place of residence, the number of patients from urban areas or 357 (86,02%) is significantly higher than the number of patients from rural areas or 58 (13,98%). The number of poisonings is higher in urban areas due to the developing industry, the greater availability of chemicals used in households, as well as due to exposure to stress and dynamic lifestyle.

Figure 6. Overview of the number of poisonings in patients from urban and rural areas



Presence of psychological and psychiatric conditions is recorded in 53 (11,32%) cases. These are conditions such as schizophrenia, anxiety, depression, which are diagnosed by psychiatrist and for which patients receive regular therapy. Since 27 (6,11%) of the total number of cases were urgent, they were referred to the University Clinic of Toxicology in Skopje for further investigation, and the remaining 388 (93,89%) were treated in Clinical Hospital Shtip. Only 3 (0,72%) of the total number of poisonings ended lethal.

5. DISCUSSIONS

The pattern of acute poisoning changes over time and varies from country to country and even between geographical areas within the same country. (4) Substantial differences in socio-economic and cultural situations in different countries also give rise to different patterns of poisoning with various toxic agents. Different literature has shown variations in age and sex distribution of poisoning cases.

In developing and low-income countries in Europe, most poisonings occur in men. (5) Various retrospective studies based on research conducted in hospitals in southern India (69,9%), Iran-Tehran (51%), Saudi Arabia (73,6%) and Kenya also showed a higher incidence of acute poisoning in males. (5-8) In terms of age, over 60% occur in adolescents and adults between the ages of 15-59 and most cases were aged 21-30. (9) Studies have also shown seasonal variation of acute poisoning in different parts of the world. In a study conducted in Iran, the seasonal distribution in patients with poisoning suggested culminations in spring (28%) and summer (27,5%) and lower numbers in winter (23,6%) and autumn (20,8%). Suicidal poisoning was also seen to occur predominantly during the spring (28,2%), while accidental poisonings were more common during the autumn (33,3%). (10) In Qatar, seasonal differences have been observed in patients seeking help for poisoning in summer and autumn. (11) However, in China there is no significant difference in the distribution of the season. In January, the incidence is the highest (11,3%), while in March it is the lowest (6,25%). (12)

In a study conducted in Ontario, Canada between 2012-2017, emergency department visits were higher among women compared to men. The incidence of poisoning in relation to the group is highest in people aged 20-64 years, with an increase in incidence of 29% in young people aged 10-19 years. The main reason (70,7%) for the visits to the emergency department was suicidal drug poisoning. And that, 36,9% were the result of poisoning with anti-epileptics, sedatives, antipsychotics, psychotropic drugs. (13)

According to reports from the U.S Centers for Poison Control in 2018, more than 2.1 million exposures of poisons or 631 poisonings per 100 000 inhabitants were registered. 76,7% of all exposures were accidental, 19,1% suicidal, and 2,5% undefined. The highest incidence was in children under 6 years, they made up half of the total exposure to toxins (44,2%), adults made up 40,5%, and adolescents 8,2%. The most common substances that cause intoxication in children are cosmetics and personal hygiene products. While drugs (sedatives, antidepressants, antipsychotics, antihypertensive drugs) were the leading means of intoxication. Of the suicidal poisonings, 6,43% had a fatal outcome compared to 2,93% of the accidental poisonings. (14)

Several factors can contribute to the wide range of poisoning in different countries: climate, socio-economic factors, cultural, ethnic variations, and religious beliefs that prevail in the community. They all affect individual behavior and

lead to acute poisoning. (15) The authors believe that there is an association between current self-harming behavior and a history of childhood sexual abuse, as well as negative emotions (anxiety, depression, aggression). (16) Economic difficulties, marital discord are important causative causes in middle-aged people, while endogenous depression or loss of a spouse are cause in the majority of the elderly. (17)

6. CONCLUSIONS

As the official statistics show an increase in the number of deaths due to poisoning every year (18), and at the same time our results showed an increase in the number of intoxications regardless of the motive, it is necessary to take preventive measures to prevent them. Through educational brochures and models it is necessary to acquaint the population with the risk of using different chemicals, to emphasize the danger of incorrect combination of drugs, their dosage, and to emphasize the dangerous and harmful effects of alcohol and its abuse. As a special problem that occurs in acute poisonings, we mentioned that they are suicidal poisonings. Therefore, it is necessary to take preventive measures that would reduce the percentage of these poisonings. Suicides can be prevented at least in part by restricting access to suicidal ideation, by training primary care physicians and health professionals to identify at-risk individuals. Our results have shown a link between suicidal ideation in patients with psychiatric disorders, and we therefore consider it is necessary to take steps to reduce the rate of emotional distress, to change irrational, negative thoughts, to visit a psychologist and psychiatrist, and to apply psychotherapy techniques.

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