

MEN'S HEALTH: HOSPITAL ADMISSIONS FOR POISONING RECORDED IN A TOXICOLOGY TREATMENT CENTER

Saúde do homem: internações hospitalares por intoxicação registradas em um centro de assistência toxicoló

Salud del hombre: internaciones hospitalarias por envenenamiento registradas en un centro de asistencia toxicológica

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ABSTRACT

Objective: the study aims to characterize hospitalization among men with diagnoses of poisoning in a toxicology information and treatment center in the Brazilian state of Paraná. **Methods:** Descriptive research, with a quantitative approach, on records in the Monthly Listing of Hospitalized Patients, in the period 2006 - 2010. **Results:** 2448 hospitalizations of men were analyzed, representing 60.9%. The men had a mean age of 36.5 years; 1610 (65.8%) were adults, and the majority (77.8%) were hospitalized with the diagnosis of poisoning by abuse drugs. Of the 505 (20.5%) hospitalizations resulting from individual accidents, 252 (49.9%) involved children. Suicide attempts were responsible for 440 (18.0%) hospitalizations, of which 110 (25.0%) occurred among adolescents. The mean length of hospitalization was five days, although 81 (3.3%) men occupied beds in intensive care, and 106 (4.3%) died. **Conclusion:** Due to the ratio of hospitalizations from poisoning among the sexes, one can infer greater seriousness in poisoning in men at all age ranges.

Keywords: Men's health; Poisoning; Hospitalization.

RESUMO

Metodos: Pesquisa descritiva, com abordagem quantitativa de registros da Listagem Mensal de Pacientes Internados do período de 2006 a 2010. **Resultados:** Foram analisadas 2.448 internações masculinas, representado 60,9%. Os homens tinham idade média de 36,5 anos, 1.610 (65,8%) eram adultos, e a maioria (77,8%) foi internada com diagnóstico de intoxicação por drogas de abuso. Das 505 (20,5%) internações decorrentes de acidente individual, 252 (49,9%) envolviam crianças. A tentativa de suicídio foi responsável por 440 (18,0%) internações, sendo 110 (25,0%) em adolescentes. O tempo médio de internação foi de cinco dias, mas 81 (3,3%) homens ocuparam leitos em terapia intensiva e 106 (4,3%) morreram. **Conclusão:** Pela razão de internações por intoxicação entre os sexos, pode-se inferir maior gravidade nas intoxicações em homens em todas as faixas etárias.

Palavras-chave: Saúde do homem; Envenenamento; Hospitalização.

RESUMEN

Objetivo: Caracterizar las internaciones hospitalarias de hombres con diagnóstico de intoxicación registradas en un centro de información y asistencia toxicológica del Paraná. **Métodos:** Estudio descriptivo con enfoque cuantitativo de los listados mensuales de registros de pacientes hospitalizados en el período de 2006 a 2010. **Resultados:** Fueron analizadas 2448 internaciones masculinas (60,9%). Los hombres tenían una edad media de 36,5 años, 1610 (65,8%) eran adultos y la mayoría (77,8%) fue ingresada con el diagnóstico de intoxicación por abuso de drogas. De los 505 (20,5%) ingresos procedentes de accidentes individuales, 252 (49,9%) envolvían niños. El intento de suicidio fue responsable por 440 (18,0%) hospitalizaciones, siendo 110 (25,0%) en adolescentes. **Conclusión:** En razón de las hospitalizaciones por intoxicación entre los sexos, se puede inferir mayor gravedad en los casos de envenenamiento en hombres de todas las edades.

Palabras-clave: Salud del Hombre; Envenenamiento; Hospitalización.

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INTRODUCTION

This article is anchored in the discussion on men's health, which is a challenge for the health services, given that the paradigms involving men and masculinity remain focussed on masculine invulnerability and invincibility. Men, due to a number of cultural and educational matters, are still considered invulnerable and immune to any sort of illness, which contributes to their lack of care for their health and the fact that they expose themselves to more risks than women¹.

Several studies have discussed the question of male health, seeking to comprehend the different reasons for the high profiles of morbimortality among men. The main causes of the high rate for morbimortality among men compared to women, during all phases of the life cycle are tobacco use, cancers, high blood pressure, diabetes, obesity, violence and alcoholism¹.

Regarding healthcare, the low demand from the male population for the primary care services constitutes a relevant problem for public health; in general, when men seek the health services, it is linked to a clinical situation which is already chronic, with biopsychosocial consequences for this population group's quality of life, besides significantly overburdening the Unified Health System (SUS)².

These differences between the sexes show a health situation which is unfavorable for men, and which needs to be considered and faced by the health services³. In 2008, the Ministry of Health announced the Brazilian Comprehensive Healthcare Policy for Men, with the objective of covering all the aspects of men's health in their different stages of life through actions and services, humanization and qualification of health care for men, and guidance for the male population, to family members, and the community on promotion and prevention in health, as well as protection, treatment and recovery from health problems affecting men¹.

The hope is to promote improvement in the male population's health conditions, contributing effectively to a reduction in this population's morbidity and mortality, through the rational confrontation of risk factors and through facilitating access to actions and services of comprehensive health care¹.

The differentials in health characteristics between the sexes are well-known. Studies show that, generally, women live longer than men^{3,4}. The majority of the traditional health indicators show the existence of this differential, with male mortality being greater at practically all ages and for all causes. Also, life expectancy at birth is also always lower for men⁴.

Some questions have been the object of concern among health professionals, with the growth of external causes as an important cause of mortality and morbidity

standing out, both in developed countries and those in development¹. The expression "external causes" covers health threats such as falls, drownings, traffic and work accidents, and poisonings^{1,5}.

Poisoning is a manifestation, through clinical signs and symptoms, of harmful effects, produced by the interaction of a chemical substance in the organism. There are more than twelve million known chemical products, of which approximately three thousand cause the majority of poisonings; however, any substance ingested in sufficient quantity can be toxic⁶.

Of the notified cases, 50.8% occur among men, as do 69.1% of the deaths resulting from poisoning^{5,6}, evidencing that for the male sex there is greater seriousness in cases of poisoning. In this context, the present study aimed to characterize the hospitalizations of men with diagnosis of poisoning registered in a toxicology information and treatment center in the state of Paraná, Brazil, with a view to contributing to knowledge on men's health, and to making the information on hospitalizations due to poisoning in men registered in a toxicology information and treatment center available to health professionals, in particular the nursing professionals. Taking into account that poisoning among men has greater lethality among the cases, the nursing team professionals - because they are directly linked to the emergency care in hospital centers - must know this population's profile, as in this way they may be able to establish strategies directed at comprehensive health care for this population.

MATERIAL AND METHODS

This is descriptive research, with a quantitative approach to the data. It was undertaken through a retrospective analysis of the records in the Monthly Listing of Hospitalized Patients in a toxicology information and treatment center (CIAT) in Paraná.

This CIAT is a center of excellence for toxicological emergencies, linked to the National Health Surveillance Agency (ANVISA), attending requests for information for help with diagnosis and treatment procedures from health professionals and the population in general, as well as carrying out the role of toxicological surveillance in the North-West region of Paraná.

The study population was made up of the male patients, of all age ranges, who were hospitalized with a medical diagnosis of poisoning from a variety of agents, in the period from January 2006 to December 2010, accessed in the Monthly Report on Hospitalized Patients. This is a printed list, in which details on all the patients notified to the center and hospitalized in hospitals in the macro-region of North-West Paraná, after a minimum stay of twelve hours of clinical observation, are recorded by hand. The following

variables were compiled: patient's age; circumstances and agent of the poisoning; duration and sector of hospitalization; and the case's clinical outcome.

Age was classified by stages in life cycle: child (zero to 11 years of age), adolescent (12 to 21 years of age), adult (22 to 59 years of age) and older adult (over 60 years of age). The circumstances of the poisoning and the toxic agent involved were classified according to the National System for Toxicopharmacological Information⁵, as: abuse, individual accident, suicide attempt, occupational or other (self-medication, differential diagnosis, administration error, adverse reaction, inappropriate use and therapeutic use); the agents were classified as abuse drugs (alcoholic beverages, marijuana, crack and cocaine), medications, agrotoxins, animals (venomous and non-venomous) rodenticides and others (food, cosmetics, household cleaning chemicals, industrial chemical products, veterinary products, unknown products and plant toxins); the duration of hospitalization was grouped in days: one day, 2 to 4 days, 5 to 7 days, 8 to 15 days, 16 to 30 days, and over 30 days; the sector of hospitalization was categorized as Emergency Room (ER), ward or intensive care unit (ICU); and the clinical outcome of the case was classified as death or not.

A data base was set up using the Epi-info software version 3.5.1, in which the data was typed, processed and analyzed through simple descriptive statistics, so as to present the variables, giving them in terms of absolute and relative frequency.

The study was approved by the University of Maringá's Standing Committee for Ethics in Research Involving Human Beings (COPEP/UEM), under decision nº 276/2011. As it was research using data from epidemiological records, a request was made for the Terms of Free and Informed Consent to be dispensed with.

RESULTS

In the period studied, 4020 hospitalizations were recorded with diagnoses resulting from the effects of poisoning, of which the majority (60.9%) occurred in men, there being a ratio between the sexes of 1.5 men for each woman. The men had a mean age of 36.5 years (± 19.5), varying between four days and 93 years. Regarding the men's place in the life cycle, the majority - 1610 (65.8%) - were adults. The cases' distribution between children, adolescents and older adults presented numerical approximation - being 299, 255 and 284 cases, respectively. (Table 1).

It was observed that the most frequent circumstances were abuse, individual accident, and suicide attempts. Drug abuse was present in 1340 (54.7%) cases. Of these, 1043 (77.8%) were adults, 222 (16.5%) were older adults, and 03 (0.2%) were children, aged 8, 10 and 11 years old. Accidental poisoning was recorded for 505

(20.5%) hospitalizations, of which 252 (49.9%) occurred in children. There were 440 (18.0%) hospitalizations due to suicide attempts, of which 308 (70.0%) occurred in adults and 110 in adolescents (25.0%); attention is drawn to the 04 (0.9%) children who also attempted suicide.

The group of toxic agents most-commonly involved in the poisonings was the abuse drugs, and the drug most related to hospitalization was alcohol, present in 1287 (96.0%) records. Medication was present in 385 (15.7%) hospitalizations, of which 189 (49.1%) occurred in adults and 116 (30.1%) in children, representing the most-commonly encountered agent in poisoning among children. Agrotoxins were found in 230 (9.4%) hospitalizations, with attention called to 24 cases (10.4%) in children.

Hospitalization varied in length between one and 90 days. The majority of the patients registered (970 - 39.6%) were hospitalized for one day, but 54 (2.2%) patients were hospitalized for over 30 days, among whom four (7.4%) were children. The majority of the patients (1902 - 77.7%) were hospitalized in the ER, but 81 (3.3%) needed to be treated in ITU, of whom 18 (22.2%) were children. Of the patients registered, 106 (4.3%) died as a result of the poisoning or its complications, including three (2.8%) children.

Stratifying the variables of seriousness and agent, it was ascertained that agrotoxin agents are responsible for the greatest number of patients hospitalized in ICU (10 - 4.3%) and also for the greatest number of deaths (14 - 6.0%). Hospitalizations involving animals, on the other hand, had the lowest frequency of hospitalization in ICU (5 - 2.3%) and did not cause deaths among the men who were poisoned. (Table 2).

DISCUSSION

The present study backs up the data found in the literature, which indicates poisonings as important factors in illness, and poisonings in men as more frequent than in women^{3,7}. Hospitalization, however, occurred in higher proportions among men. While cases of poisoning in men in 2009 represented 50.8% of the notifications⁵, the hospitalizations involving men found in the present study represented 60.9%. Considering that the hospitalization of the patients can indicate greater clinical seriousness, it may be inferred that the poisonings in men were more serious within the universe of the patients investigated.

Men tend to seek the health services when the health problems they present are already chronic, or in the face of the eminence of the worsening of the clinical status, either because of aspects related to masculine invulnerability or because of the demands of their job, as they still occupy the role of being the provider of the family's financial resources². In the present study, it was ascertained that the hospitalizations from poisoning occurred predominantly in adults, who are in the economically active stage of their life cycle.

Table 1. Distribution of hospitalizations from poisoning in men, by circumstance, agent, duration of hospitalization, sector of hospitalization, and clinical outcome. Paraná, 2011

Variables	Child		Adolescent		Adult		Older Adult		Total	
	n	%	n	%	n	%	n	%	n	%
Circ.s										
Abuse	3	0.2	72	5.3	1043	77.8	222	16.5	1340	54.7
Ind. accident	252	49.9	49	9.7	173	34.3	31	6.1	505	20.5
Suicide att.	4	0.9	110	25.0	308	70.0	18	4.1	440	18.0
Occupational	-	-	16	21.3	54	72.0	5	6.7	75	3.1
Other	40	45.4	8	9.0	32	36.3	8	9.0	88	3.6
Agent										
Abuse drugs	3	0.2	72	5.3	1043	77.8	222	16.5	1340	54.7
Medication	116	30.1	66	17.1	189	49.1	14	3.6	385	15.7
Agrotoxins	24	10.4	34	14.7	154	66.9	18	7.8	230	9.4
Animal	45	20.5	31	14.1	126	57.3	18	8.2	220	8.9
Rodenticide	26	29.8	17	19.5	41	47.1	3	3.4	87	3.5
Other	85	45.7	36	19.3	56	30.1	9	4.9	186	7.5
Hospitalization (days)										
1	191	19.7	135	13.9	579	59.7	65	6.7	970	39.6
2 to 4	71	9.6	66	8.9	523	70.5	82	11.1	742	30.3
8 to 15	13	4.7	20	7.2	188	67.9	56	20.2	277	11.3
5 to 7	14	5.8	20	8.3	171	71.0	36	14.9	241	9.8
16 to 30	6	3.7	12	7.3	110	67.1	36	22.0	164	6.7
> 30	4	7.4	2	3.7	39	72.2	9	16.7	54	2.2
Sector of hosp.										
ER	232	12.2	197	10.4	1274	67.0	199	10.5	1902	77.7
Ward	49	10.5	47	10.1	292	62.8	77	16.6	465	19
ICU	18	22.2	11	13.6	44	54.3	8	9.9	81	3.3
Clinical outcome										
Death	3	2.8	2	1.9	74	69.8	27	25.5	106	4.3
Total	299	12.2	255	10.4	1610	65.8	284	11.6	2448	100

Table 2. Distribution of the variables of seriousness, by the poisoning's causal agent, in men. Paraná, 2011

Variables	Abuse drugs		Medication		Agrotoxins		Animal		Rodenticide		Other		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Sector of hospitalization														
ER	1041	77.6	308	80.0	170	73.9	166	75.4	70	80.5	147	79.0	1902	77.7
Ward	258	19.2	64	16.6	50	21.8	49	22.3	14	16.1	30	16.1	465	18.9
ICU	41	3.0	13	3.4	10	4.3	5	2.3	3	3.4	9	4.9	81	3.3
Clinical outcome														
Death	79	5.8	8	2.1	14	6.0	-	0.0	1	1.1	4	2.1	106	4.3
Total	1340	54.7	385	15.7	230	9.4	220	8.9	87	3.5	186	7.6	2448	100.0

Among the circumstances for the toxicological events and consequent hospitalization, drug abuse took first place, principally involving the abuse of alcohol. In the present study, the majority of the hospitalizations result-

ing from the abuse of drugs took place in adults and, in addition to the high number of cases, was associated with worse clinical outcomes, as several patients needed hospitalization in the intensive care unit and subsequently died.

The use of abuse drugs constitutes one of the most serious social and health problems of our age, affecting the individual in his biopsychosocial dimension⁸.

Those who use abuse drugs are hospitalized either because of the clinical effects caused by the drug in the organism, as a result of the physio-pathological changes originating in the prolonged use of these substances, or because the use may be associated with violence and traumas. A study undertaken in a CIAT unit in Paraná, whose purpose was to characterize the hospitalizations from alcohol poisoning and involvement in violent acts, found 732 cases in the period between 2009 and 2010, with the majority (96.0%) occurring among men, with 253 (34.5%) cases presenting some type of violence associated; four men (1.6%) subsequently died⁹.

Accidental poisoning in children occupied second place in the circumstances of poisonings resulting in hospitalization, which backs up data from Brazilian literature on the subject of the greater exposure of boys to agents which cause more serious poisoning. Boys, for cultural and gender reasons, are exposed earlier to accidents due to more "adventurous" play¹⁰.

From a cultural perspective, as society tends to permit families to bring up male children with less vigilance, the boys acquire the liberty to carry out activities with less direct supervision from adults earlier than girls do. Thus, from the end of the first year of life onwards, the boys have double the girls' chances of suffering injuries¹¹.

One's attention is called in the present study to the fact that for every 2.3 cases of hospitalization due to poisoning in adolescents, one resulted from a suicide attempt. Among males, one can observe the predominance of the use of physical methods for suicide, followed by use of medications and other chemical substances¹².

Adolescents face social, political, religious and economical aspects in the affective process to consolidate the formation of their personality and acquire conditions to care for their own destiny, so as to reach the condition of adulthood¹². During this transitional period, the availability and access to medications and other chemical substances can increase the adolescent's vulnerability to suicide attempts.

Among the agents responsible for hospitalizations, the medications were in second place. The occurrence of poisoning in children may indicate the incorrect storage of the substances, associated with the characteristics typical of that age, such as curiosity and imitation of procedures undertaken by adults¹³.

One study undertaken to describe the profile of the acute poisonings in children attended in 2006 in a hospital in the public network in Goiânia, identified that the majority of the poisonings involved male children, and that the place of occurrence of 80.2% of the poisonings was the children's residence¹¹.

Data from the National Toxicological-Pharmaceutical Information System referent to the years 1999-2009 shows 1,007,690 cases of poisoning recorded, with a total of 5,224 (0.5%) deaths. In this period, medications were responsible for 925 deaths. In 2009, the toxic agents involved in the greatest number of deaths were the agrotoxins, medications, and abuse drugs, repeating the data from 2008⁵.

A study undertaken to describe the epidemiological profile of the mortality from poisoning with medications, in the Brazilian population between 1996 and 2005, based on the analysis of data recorded in the Ministry of Health's Mortality Information System indicated 4,403 (0.04%) deaths related to poisoning with medications, equivalent to the frequency of 4.6 deaths/10,000 records. The deaths occurred, above all, in men (53.9%) and the main circumstance was suicide (57.2%)⁷.

The suicide attempts using medications and agrotoxins were the most serious events in the poisonings, probably due to the greater exposure to large quantities of the agent, causing an increase in the duration of hospitalization as well as the need for treatment in ITU¹⁴, which was also observed in the present study.

Although they lead to a lower frequency of hospitalization, the agrotoxins represent a higher proportion of deaths. As in the present research, in 2009, the agrotoxins were responsible for 174 (42.5%) deaths, of which the majority (127-84.2%) occurred in men⁵.

Research carried out to assess the impacts of use of agrotoxins on the health of those handling them, taking into account the characteristics of rural work and of their use in olive oil production in the city of Teresópolis in the state of Rio de Janeiro, showed that the chance of poisoning for men is twice as high as it is for women^{1,15}.

Suicide attempts using agrotoxins are commonly met in hospital centers. This fact may be associated with the population's knowledge about these substances' high toxicity, and to the easy access to these products, making them a dangerous weapon for those individuals who attempt suicide. The large number of cases of poisoning involving suicide attempts in men is related to men's greater involvement in occupational activities and, consequently, to their easy access to these products¹⁴.

There were, however, 24 cases of children being hospitalized with diagnoses of poisoning by agrotoxins, implying exposure to the substance in contaminated environments or negligence in storage, making it possible for the children to access these substances. The children who were poisoned by agrotoxins needed a longer period of hospitalization, and three died as a direct result of the poisoning or from clinical complications inherent to it.

The duration of hospitalization for the poisoned individuals was from one to four days, but the majority of

those hospitalized remained in the emergency care unit, evidencing situations of acute poisoning, and there was a need for swift intervention to keep the patient alive, to re-establish the state of health, and to prevent the worsening of the clinical situation. Nevertheless, 81 patients needed to be hospitalized in the intensive care unit, due to the clinical seriousness of their cases, leading to financial and technological costs on the health system and, above all, high intangible social and financial costs to the hospitalized individuals and their families.

The family, being a structure organized by parental or affective affinity, suffers relevant changes and emotional impacts during the hospitalization of one of its members. Fear, suffering and routine doubts increase in the face of death, with the uncertainties about the treatment and the prognosis that are raised by longer inpatient treatment, or inpatient treatment in ICU¹⁶.

The percentage of deaths in the population investigated (106-4.3%) is high, even by the standards of intensive care, and is perverse, bearing in mind that the majority of the poisonings are avoidable by behavioral methods or public policies.

The deaths among the older adults occurred in greater proportions. For every ten poisoned older adults, there was one death as a result of the poisoning, whereas in adults one death occurred for every 22 people hospitalized. Considering the social impact and the costs to the health services from the occurrences among older adults, whose number is set to rise in Brazil in the next few years, it is necessary to understand this type of event better, articulating this issue with the nursing care, bearing in mind that in educational actions and health surveillance the nurse has guiding axes for her professional role¹⁷.

The agent with the greatest lethal potential was agrotoxins, causing one death for every 16.4 patients. The high incidence of poisoning and the high morbimortality show the lack of information on these strong toxic agents, so recognizing these dangers to health early, directing steps which aim to restrict indiscriminate access to agrotoxins, raising awareness of the importance of use of personal protective equipment, encouraging the production and consumption of organic products and instituting toxicological surveillance are attitudes which need to be incorporated into routine health practice¹⁸.

CONCLUSION

Through this study it was identified that hospitalizations from poisoning are more frequent among men, adults, who are poisoned due to substance abuse, followed by individual accidents and suicide attempts, with a higher

number of poisonings in children and adolescents involving these last circumstances. The abuse drugs represented the agent found most, followed by medications and agrotoxins.

In the majority of hospitalizations, the duration was less than four days, with the majority of patients hospitalized in emergency units; however, high numbers of hospitalizations in intensive care units and deaths were found, involving children as well, and the agrotoxins presented the greatest lethality among the agents.

The data found, although referent to the study of hospitalizations recorded in a toxicology information and treatment center, indicates that investment in public policies directed at men's health is necessary, as this is more susceptible to serious poisonings. In this regard, the health services which attend this demand perform an important role in the prevention of those poisonings understood as avoidable.

One has to bear in mind that the need for strategies for the prevention of poisoning must extend beyond the assessment of physical risks, and consider ways of encouraging individuals to seek professional help when they face emotional problems or problems related to mental health or substance abuse, so as to reduce the feeling of masculine invulnerability.

It is worth emphasizing that the study does not present an exact profile of the male patients hospitalized with a diagnosis of poisoning in the territory covered by the center in question. This fact is related to the sub-notification of cases of poisoning to the toxicology information and treatment centers. In this regard, studies are suggested based on the hospital units which attend the poisoned patient.

The importance of the health professional is stressed, particularly those of the nursing team, in the process of health education and in the surveillance of cases - informing parents and guardians about the principal risks to which children may be exposed, alerting young people and adults to preventing poisonings, recognizing at an early stage the cases of poisoned patients and establishing health surveillance in relation to the availability of chemical substances capable of causing poisoning in men - and also in the daily struggle to form citizens who are pro-active in prevention, with legislation and investment in wide-ranging public policies.

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