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ANALYSIS OF EXOGENOUS INTOXICATIONSIN THE MUNICIPALITIES OF GERES V-PE, FROM 2009 TO 2013

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ABSTRACT

Analyzing the exogenous poisonings in the municipalities of GERES V-PE, in the period 2009 to 2013, from the National System for Notifiable Diseases - SINAN. There was conducted a quantitative, cross-sectional, descriptive and exploratorystudy, from the survey of secondary exogenous poisoning data, recorded inregional SINAN. In SINAN 170 of exogenous poisoningcases were recorded, predominating medicines with 27% of cases, the main age group was of 15-29 years old, with 32,9%, and females prevailed with 57,6 %. The weakness for filling is the main limitation of this study there are suggested actions of awareness from the health professionals, becoming evident the health responsibility, giventhe filling of notifications, and the promotion of preventive interventions in most vulnerable populations.

Keywords: Poisoning; Public Health; Epidemiology.

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INTRODUCTION

Toxicity originated from the Greek “Toxikon”, what means medicine or poison. It is defined by the ability of a substance to produce harmful effects on the living organism, except in allergic reactions and infectious[1].

According to Ordinance number 104,from January 25th, 2011, cases of exogenous poisoning must be notified and investigated, from the record in the National System of Notifiable Diseases - SINAN, according to the rules and routines established by the Secretariat of Health Surveillance, Ministry of Health (SVS/MS). Exogenous poisoning can be caused by chemicals, including pesticides, toxic gases and heavy metals, this event, compulsory notification. In cases of exposure to chemical contaminants,there are classified as Compulsory Notification Immediate - LNCI. The SINAN features case of exogenous intoxication suspect the individual who has been exposed to toxic substances and to present clinical signs and symptoms of intoxication and/or laboratory abnormalities[2].

The information system was implemented in the country gradually, since 1993. It is currently implemented throughout the national territory, in turn has purpose of collecting, transmitting and disseminating data generated routinely by the epidemiological surveillance system at the three levels of government to support research processes and analysis of information about compulsory notifiable diseases[3].

According to the latest report published by the National Toxicology Information System (SINITOX), in 2011 there were registered 104.117 cases of exogenous intoxication. The main toxic agents involved were the medicines (29,54%), household cleaning (11,39%) and pesticides (7,15%)4. In 2013, the Toxicological Assistance Center (CEATOX) of Pernambuco registered approximately 12 thousand people between information, notifications and revaluations. Of these, 2.724 were cases of poisoning and envenomations[5].

In developed countries, cases of poisoning may reach 2% of the population and in developing countries reach about 3% of the population. The United States reported four million toxic exposures in 2009 in Brazil; it estimates are three million annual poisonings, most unregistered due to underreporting and diagnostic difficulties[1].

According to the literature in the Brazilian Northeast, medicines represent the most prevalent type of substance in exogenous poisoning, accounting for 50% of cases, followed by household cleaning products with 23,1%[6]. The disinfectants are handled substances for cleaning or disinfecting collective or public spaces[7].

It is observed in V GERES the absence of local information about the complications and consequences arising from exogenous intoxication. Given this context, it was necessary to delimit part of Wild Pernambuco, from the municipality of Garanhuns and surroundings, as it features representative regional characteristic with the concentration of small farms, with a predominance of family agriculture, social and economic problems related to farming beans and cassava.

Before the aforementioned context, it is necessary to elaborate the diagnosis of V Regional Health-PE, in order to provide knowledge about the exogenous poisoning from the local reality. This will make it possible to sensitize health professionals to correctly identify and report cases, in order to reduce the high number of underreporting. The reduction in morbidity and mortality

from accidents in toxicological V Pernambuco State Regional Health is directly related to the training and qualification of professionals involved in care, since it favors the improvement of the quality of the records.

Given the above, this study aims to examining the exogenous poisoning occurred in the municipalities of V GERES-PE, in the period 2009 to 2013 from the National System of Notifiable Diseases - SINAN, and identify toxic agent type most used, origin of users, age, gender and outcome. From the above variables it was possible to obtain an overview of the current status of GERES V with regard to exogenous intoxication.

METHOD

There was performed a quantitative, cross-sectional, descriptive and exploratory study, from the data survey of exogenous poisoning recorded in SINAN. The study population was composed of 21 municipalities belonging to GERES V-PE, with a total of 513.660 inhabitants[8]. The headquarters is located in the city of Garanhuns, economically centers of the Wild region and has the Dom Moura Regional Hospital that serves as a reference for other municipalities. The study contains a dependent variable the amount of exogenous intoxication and the independent variables the type of toxic agent most widely used, origin of users, age, gender and outcome.

The data collection procedure was performed by accessing the SINAN in its regional database. Data were exported from TabWin for Microsoft Excel 2010 program and worked in absolute and relative frequencies. It could not use data before 2009, because only from 2007, the new information system was established, and by 2008 was structured so that only from 2009 it was possible to obtain more accurate information.

The analysis of data on the exogenous intoxication was grouped in tables in Microsoft Word 2010 program in order to facilitate the visualization and detection relevant to the understanding of results. The research was conducted in accordance with the ethical and legal precepts of Resolution 466/2012, CNS (National Health Counsil)[9].

Data sheets were used without identifying the cases do not represent harm to affected individuals. Information was acquired after the signing of the Letter of Consent, the current manager of GERES V-PE.

RESULTS

In the years 2009-2013, there were recorded in the SINAN, by 21 municipalities belonging to V GERES- PE, 170 cases of exogenous poisoning caused by various toxic agents. There were 19 cases of records in 2009; 20 in 2010; 43 in 2011; 44 in 2012 and 44 in 2013. Of these 28 cases there were classified as ‘Ignored / In blank’, the epidemiological surveillance failed, for various circumstances, define the type of toxic agent involved in exogenous intoxication.

It is observed that the age group most often of exogenous intoxication was 15-29 years old, corresponding to 32,9% (56 cases). Then, 0 to 14 with 28,2 % (48 cases), 30 to 44 years old with 25,2% (43 cases), 45 to 60 with 8,8% (15 cases) and more than 60 years old with 4.7 % (8 cases) (Table 1).

Table 1 - Characteristics of exogenous poisoning victims according to age group and gender notified at V GERES, Stateof Pernambuco. Brazil, 2009 – 2013.

Age (years)	2009		2010		2011		2012		2013		2009-2013	
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%
0-14	9	47,4	1	5	12	28	15	34	11	25	48	28,2
15-29	4	21	9	45	16	37	10	22,7	17	38,6	56	32,9
30-44	4	21	5	25	9	21	15	34	10	22,7	43	25,2
45-60	1	5,3	3	15	3	7	3	7	5	11,4	15	8,8
>60	1	5,3	2	10	3	7	1	2,3	1	2,3	8	4,7
Gender												
Male	8	42,1	8	40	22	51,2	18	41	16	36,4	72	42,4
Female	11	57,9	12	60	21	48,8	26	59	28	63,6	98	57,6

Source: Information System of Reportable Diseases (SINAN) V Regional Health Management (V GERES), 2014.

Regarding the female, it was evidenced 57,6% (98 cases) of victims of exogenous intoxication, prevailing throughout the period, except in 2011 that prevailed males accounting for 51,2% (22 cases). From 2009 to 2013, males accounted for 42,4% (72 cases) records (Table 1).

The medicines were the main toxic agent used accidentally or intentionally by victims of exogenous intoxication, evidenced by 27% (46 cases). In 2013, the drugs had the highest prevalence in the analyzed period, reaching 43,2% (19 cases). The pesticide poisoning accounted for 21,8% (37 cases). It is worth mentioning the poisoning caused by the ingestion of food and beverages, which recorded 17% (29 cases) (Table 2).

Table 2 - Characteristics of exogenous poisoning victims according to toxic agent notified on V GERES, State of Pernambuco, Brazil.Brasil, 2009 a 2013.

Toxicagent	2009		2010		2011		2012		2013		2009-2013	
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%
Medicines	4	20	6	30	7	16,3	10	22,7	19	43,2	46	27
Pesticide	3	15,8	10	50	7	16,3	8	18,2	9	20,5	37	21,8
VeterinaryProduct	1	5,3	-	-	1	2,3	2	4,5	3	6,8	7	4,1
Home use product	-	-	-	-	1	2,3	1	2,3	-	-	2	1,2
Cosmetics/personalhygiene	-	-	-	-	-	-	-	-	1	2,3	1	0,6
Industrial chemical	-	-	-	-	1	2,3	-	-	-	-	1	0,6
Drugsof abuse	-	-	-	-	1	2,3	1	2,3	1	2,3	3	1,8
PoisonousPlant	-	-	-	-	1	2,3	2	4,5	1	2,3	4	2,4
Food/drink	2	10,5	-	-	11	25,5	16	36,7	-	-	29	17
Other	8	42,1	-	-	3	7	-	-	1	2,3	12	7
Ignored	-	-	1	5	4	9,3	2	4,5	1	2,3	8	4,7
In blank	1	5,3	3	15	6	14	2	4,5	8	18,2	20	11,8

Source: Information System of Reportable Diseases (SINAN) V Regional Health Management (V GERES), 2014.

Among the exposure circumstances by toxic agents there were deployed to attempt suicide with 29,4% (50 cases). Then, food intake / drinks with 16,5% (28 cases), accidental ingestion of which corresponded to 12,9% (22 cases) and habitual use of a substance with 10,6% (18 cases). In addition, it is worth noting the high quantitative of 12,3% (21 cases) categorized as other / ignored or in blank. (Table 3).

Table 3 - Characteristics of exogenous poisoning notified according to the circumstance of exposure on V GERES, State of Pernambuco, Brazil, 2009 to 2013.

Circumstanceofexposure	2009		2010		2011		2012		2013		2009-2013	
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	
Habitual usage	7	1,3	4	0,8	3	1,3	2	0,9	2	0,9	18	10,6
Accidentalusage	3	0,5	-	-	6	2,6	3	1,3	10	4,4	22	12,9
Therapeutic use	-	-	1	0,2	1	0,4	2	0,9	-	-	4	2,4
Inadequate medical prescription	-	-	1	0,2	-	-	-	-	1	0,4	2	1,2
Medicationerror	3	0,5	-	-	1	0,4	-	-	2	0,9	6	3,5
Self-medication	1	0,2	1	0,2	4	1,7	3	1,3	1	0,4	10	5,9
Abuse	-	-	-	-	2	0,9	2	0,9	-	-	4	2,4
Ingestionoffood/beverage	3	0,6	-	-	10	4,3	15	6,6	-	-	28	16,5
Suicide attempt	1	0,2	10	2	10	4,3	13	5,7	16	7	50	29,4
Violence/Murder		--		--		--		--		52,2	5	2,9
Other		--		--		10,4		--		--	1	0,6
Ignored		--		10,2		20,9		20,9		31,3	8	4,8
In blank		10,2		20,4		31,3		20,9		41,8	12	7

Source: Information System of Reportable Diseases (SINAN) V Regional Health Management (V GERES), 2014.

Regarding the evolution of the cases, there was a quantity of 73,5% (125 cases) of patients were cured without sequelae after exogenous intoxication. The percentage of poisoning by the death was 7% (12 cases). Furthermore, the high percentage of 16,5% (28 cases) categorized as unknown / in blank (Table 4).

The population belonging to GERES V consists of 21 municipalities with about 500,000 inhabitants.

Table 4 - Characteristics of exogenous poisoning notified in V GERES, State of Pernambuco, Brazil, 2009 to 2013.

Evolutionofthe case	2009		2010		2011		2012		2013		2009-2013	
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%
Cure withoutsequel	18	94,7	15	75	34	79	35	79,5	23	52,3	125	73,5
Cure withsequel	-	-	-	-	-	-	-	-	2	4,5	2	1,2
Deathbyintoxication	-	-	2	10	2	4,7	5	11,4	3	8,8	12	7
Deathbyother causes	-	-	-	-	-	-	1	2,3	-	-	1	0,6
Followingloss	-	-	1	5	1	2,3	-	-	-	-	2	1,2
Ignored	-	-	-	-	3	7	1	2,3	2	4,5	6	3,5
In blank	1	5,3	2	10	3	7	2	4,5	14	31,8	22	13

Source: Information System of Reportable Diseases (SINAN) V Regional Health Management (V GERES), 2014.

Among the municipalities, only 9 reported cases of exogenous intoxication, Golden Lagoon standing out with 50,7% (76 cases), then Garanhuns with 20,7% (31 cases), Paranatama with 6,7% (10 cases) and AguasBelas with 6% (9 cases). In addition, there have been reports of municipalities that do not make up the V Regional Health Management, as Recife (18 cases) and Caruaru (2 cases) during 2009 to 2013 (Table 5).

Table 5 - Municipalities of origin of victims of exogenous poisoning notified in V GERES, State of Pernambuco, Brazil, 2009 to 2013.

Municipality	2009		2010		2011		2012		2013		2009-2013	
	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%	Nº	%
Aguas Belas	-	-	-	-	-	-	7	19,4	2	4,7	9	6
Angelim	-	-	-	-	-	-	-	-	-	-	-	-
Bom Conselho	-	-	-	-	-	-	-	-	-	-	-	-
Brejão	-	-	-	-	1	2,9	6	16,6	-	-	7	4,7
Caetés	-	-	-	-	-	-	-	-	-	-	-	-
Calçado	2	10,5	2	11,8	2	5,7	1	2,7	2	4,7	9	6
Canhotinho	-	-	-	-	-	-	-	-	-	-	-	-
Capoeiras	-	-	-	-	-	-	-	-	-	-	-	-
Correntes	-	-	-	-	-	-	-	-	-	-	-	-
Garanhuns	-	-	-	-	3	8,6	-	-	28	65,1	31	20,7
Iati	-	-	-	-	-	-	-	-	-	-	-	-
Itaíba	-	-	-	-	-	-	-	-	-	-	-	-
Jucati	-	-	-	-	-	-	-	-	-	-	-	-
Jupi	-	-	-	-	-	-	-	-	-	-	-	-
Lagoa do Ouro	15	79	12	70,5	19	54,2	22	61,1	8	18,6	76	50,7
Lajedo	-	-	1	5,9	-	-	-	-	-	-	1	0,7
Palmeirina	-	-	-	-	-	-	-	-	-	-	-	-
Paranatama	-	-	1	5,9	9	25,7	-	-	-	-	10	6,7
Saloá	-	-	-	-	1	2,9	-	-	3	7	4	2,7
São João	2	10,5	1	5,9	-	-	1	2,7	-	-	4	2,7
Terezinha	-	-	-	-	-	-	-	-	-	-	-	-

Source: Information System of Reportable Diseases (SINAN) V Regional Health Management (V GERES), 2014.

DISCUSSION

In Brazil, the growing quantity of toxicological emergencies caused by or attributed to the exposure of toxic substances explain the interest in the collection process, analysis and dissemination of information throughout the country, in a decentralized and regional basis, through the National Health System for Notification of Diseases (SINAN)[10].

In the period 2009-2013, there were recorded by the 21 municipalities belonging to a quantitative GERES V, 170 cases of exogenous poisoning caused by various toxic agents. According to SINITOX11, from 2009 to 2011, 314.253 instances of exogenous intoxication were reported in the northeast region represented 15,4% of these occurrences.

In terms of age the results of this study corroborate with a data collection on exogenous intoxication rate in the city of TeofiloOtoni/MG through information records, which predominated poisoning victims between 16 to 25 years old, corresponding to 33,7%[12]. Another study, also demonstrated similar results from 2007 to 2010, especially the age group of 20 to 34 years old13. A survey conducted in PousoAlegre municipality shows diverging data with the predominant age of 13 to 20 years old in 32,6% of cases, followed by 21 to 30 in 28,2%[14]. Remember that predominated in the above studies of the working population that will bring negative repercussions for the economy, which can directly be related to the type of work activity and working conditions
The share of female victims was fairly representative in the study, which accounted for more than half 57, 6% (98 cases). These results are similar to findings of Zambolim14with 65,3%, Teles13 which reached 51.6%. In disagreement with these findings, 12study analyzing toxicological reports coming from the Legal Medical Institute (IML) of the city of Juiz de Fora - MG were male which reached 76,6% of the victims.

Toxic agents that predominated were the medicines, followed by pesticides and the intake of food and drink. These findings agree with the

results obtained at the University Hospital of Juiz de Fora-MG, where the drugs were responsible for the highest number of cases of poisoning, which corresponded to 60% of cases[10]. This result is similar to survey in the State of Paraiba in 2013, evidenced by drug poisoning, which accounted for 59,4%, the household cleaning products reached 27% of cases and pesticides reached 11,6 % of cases[12].

In addition, a study conducted by 15 poisoning by drugs accounted for 46,2% and 15,1% pesticides. Poisoning by drugs affect individuals around the world, since in most countries the pharmaceutical industry and trade in drugs are not properly regulated, thereby encourages the irrational use of medicines. In addition, there are the scarcity of information about the composition, guidelines for prevention and treatment in cases of exogenous intoxication[16].

Suicide attempt was highlighted as the main cause of exposure /contamination by toxic agents with 29,4% (50 cases),since it shows similar findings in the study of Bitencourt[15], who performed a descriptive analysis of cases of drug poisoning recorded by the Toxicological Information Center (CIT-GO) which highlights the main determinant circumstance of registered poisoning. The attempted suicide accounted for 41% of cases, followed by individual accident with 35,3 % of cases.

The city that stands out more quantitative records by exogenous intoxication was Lagoa do Ouro, with 145% of notifications more than the city of Garanhuns. It is known that Lagoa do Ourois a municipality with territorial extension of 198.761 km2[17],consisting of 12.132 inhabitants and 100% Primary Health coverage in return Garanhuns has 458.552 km2[18] land mass and 88,6% coverage in Primary Health and population of 129,408 inhabitants. It is believed that this marked number of Golden Pond municipality of notifications is directly linked to the factors described above, in addition to the structural organization of health services in this municipality, which work together impeccably.

In this scenario, the notification quantitative reduced in the city of Garanhuns, can be explained by the difficulty of diagnosis and/or underreporting, given that the Regional Hospital Dom Moura in the territory of Garanhuns, belongs to the state management, which hinders the integration of sector State Epidemiological Surveillance and Municipal Epidemiological Surveillance. It is also worth noting the absence of a municipal hospital in Garanhuns that contributes to the picture above.

Considering the evolution of the cases of victims of exogenous intoxication predominated healing without sequelae over 70% of cases. This result corroborates the study of Silva[19], found that the percentage of 69 % of cases were successfully cured without sequelae, 23.5% had confirmed the cure and 7.5 % arrived at the death.

FINAL NOTES

It is worth mentioning the need for correct and complete fulfillment of the reporting forms to ensure the quality of information collected, in addition to inadequacies in reports issued by processes without the results of drug tests and the lack of standardization in sending records.

This was the first study of exogenous intoxication covering all municipalities in the V Regional Health Management-PE, in a representative sample of the general population domiciled. The drug intoxication is an important public health problem, since the Health Surveillance System should prioritize educational and intersectoral

actions continuously. In the present study, we demonstrated the high prevalence of abuse of medicines. Therefore, there are necessary actions to ensure the correct and rational use of drugs in order to reduce, primarily, the cases of suicide attempts in young adults, especially in females, individuals more prone to this type of injury.

The fragility of the fill is the main limitation of this study, with secondary data. The possible underreporting of events studied can also be considered a limitation, as well as lack of access to demographics that does not allow a description of the demographic characteristics of patients seen by the local health service. To minimize this problem it is necessary to adopt awareness-raising of health professionals, evidenced by the sanitary responsibility turned to achieve the fulfillment of notifications, and promotion of preventive interventions in the most vulnerable population groups, in order to reduce the impact of these events on emergency units and in the health system.

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