Research Paper: Descriptive Study of Acute Poisoning Cases Admitted to Yalgado Ouédraogo University Hospital in Ouagadougou, Burkina Faso

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ABSTRACT

Background: To analyze the features of the acute poisoning cases admitted to Yalgado Ouédraogo University Hospital (CHU) in Ouagadougou.

Methods: It is a prospective study conducted in 2014. All the poisoning cases admitted to the Medical and Paediatric Emergency services in Yalgado Ouédraogo University Hospital (CHU) in Ouagadougou since January to December 2014 were included in this study. The clinical records of poisoned patients were analysed. The data collection was done through a questionnaire.

Results: Acute poisoning comprised 672(5%) out of 13442 of all the admissions to the Medical and Paediatric Emergency services in Yalgado Ouédraogo University Hospital (CHU) in Ouagadougou. About 47% of the poisoned were children up to 16 years old. Also, 55% of the poisoned were female. Medicines were the major responsible factor (41%) and then household products (27%). The poisonings were mainly (70%) accidental and unintentional; and the remaining were intentional (suicide attempt). The study tools were clinical diagnosis, history taking, and physical examination. The outcomes were positive in 70% of the cases; but negative and resulting in death in 3% of cases. About 7% of those poisoned ran away during their hospitalisation and 20% were transferred to other wards for the rest of their treatment.

Conclusion: The study provided an inventory of the situation regarding acute poisoning in the emergency services of Yalgado Ouédraogo University Hospital in Ouagadougou.

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1. Introduction

The acute poisonings are among the main causes of admissions to the medical emergency services [1]. The prognosis of poisoned patients mainly depends on the promptness and the quality of the initial care provided, the priority of which is always the symptomatic treatment [2, 3]. Poisoning is an important cause of morbidity and mortality, and toxicological emergency is an integral part of medical emergency. Lee HL et al. reported that the mortality rate in Taïwan was 4% [3]. The acute poisoning represented 5% of total admissions of the emergency service of Tabriz University Hospital, Tabriz, Iran [4]. According to some studies, the poisoned patients are mainly treated in medical emergency services and intensive care units in the university hospitals and the treatment is basically symptomatic [4-6]. In Burkina Faso, it is not allowed to have an objective and comprehensive picture of acute poisoning on the spot and to determine the quality of the care; in addition, there is no toxicology or poisons unit. That is why we decided to conduct a descriptive prospective study to analyse the characteristics of acute poisoning cases in Yalgado Ouédraogo University Hospital in Ouagadougou.

2. Materials and Methods

It was a prospective study conducted in 2014 in two wards (Medical and Paediatric emergency wards of CHU Yalgado Ouédraogo). The inclusion criteria comprised admitting to any of the two emergency services, having been diagnosed with an acute poisoning, giving an informed consent or receiving an approval from the patients' parents (mainly for children).

The survey consisted of asking questions from patients at admission, medical staff, and exploring the medical records. Two questionnaires have been drawn up to collect data: a questionnaire for the patients and another for the medical staff (Emergency physicians, paediatricians, general physicians, pharmacists and hospitals interns). The studied variables were the characteristics of the patients, the admission reasons, the poisoning circumstances, the care provided in hospital and the difficulties encountered. The obtained data were sorted out with "Excel 2010" and analyzed by "Epi Info version 6.0." The word processing was done with "Word 2010."

3. Results

Survey results on poisoning cases

We recorded 672(5%) acute poisoning cases in Yalgado Ouédraogo Hospital out of a total admission of 13442. The paediatric cases were 316(47%). The most concerned age group was 1 to 6 years (36%). The patients were 55% females and 45% males. Pupils and students were the most victims of poisoning and composed of 22% of the cases. The poison nature has been determined in 95% of the cases. Medicines were by far the poison responsible for most cases (41%) followed by household products (27%), animal venom (14%) and food (12%) as shown on Table 1.

Most medicines (53%) were provided from pharmacies, 24% from street drugs and 20% were traditional products. Among the medicinal poisons, the malaria drugs were the most used ones (20%) (Table 2) and as for household products, caustic substances (43%), pesticides (29%) and petroleum related products (26%) were the most ingested ones (Table 3).

Table 1. Distribution of cases per service according to the responsible poison

Poison	Medical Emergency	Paediatric Emergency	Total	%
Food	50	31	81	12
Medicine	165	111	276	41
Narcotics	25	01	26	04
Household products	44	137	181	27
Animal venom	62	32	94	14
Traditional Medicine	10	04	14	02
Total	356	316	672	100.0

Table 2. Distribution of poisonous medicines with reference to the admitted wards

Types of Medicine	Medical Emergency	Paediatric Emergency	Total	%
Antibiotics	10	07	17	6
Anti-emetics	28	05	33	12
Malaria drugs	44	11	55	20
Analgesics	15	10	25	9
Hypnotics/sedatives	23	05	28	10
Traditional medicines	27	08	35	13
Combination of medicines	29	10	39	14
Not specified	30	14	44	16
Total	206	70	276	100

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The poisoning circumstances were accidental in 70% of cases and suicide attempts in 30%. About 64% of patients were conscious and 76% have been transferred to the CHU within 1 to 5 hours after their exposure to the poisons. Among those transferred, 67% have been brought from local district health centre. The most used means of transport was ambulance (50%) followed by two-wheel vehicles (21%).

Results of the survey on the medical staff

The medical staff comprised hospital interns (45%), physicians (20%), and nurses (35%).

Treatment has been administered to 68% of poisoned patients. Gastric lavage was used for 22% of cases, symptomatic treatment for 37% and antidote treatment for 1%. The diagnosis was based on the clinical signs, history taking and physical examination. No toxicological analysis was done to confirm the poisoning. The treatment in 66% of the cases was successful. The mortality rate was 5%: the paediatric services recorded the highest mortality rate (15%). The main death causes were venom poisoning (42%) (Table 4) and medicines, mainly those whose nature has not been identified (35%).

Table 3. Distribution of poisonous household products with reference to the admitted wards

Household Products	Medical Emergency	Paediatric Emergency	Total	%
Petroleum by-products	2	9	47	26
Pesticides	18	05	52	29
Caustic substances	20	11	78	43
Carbon monoxide	4	0	4	2
Total	44	25	181	100

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Table 4. Distribution of venom poisoning sources per admitted wards

Venom Sources	Medical Ward	Paediatric Ward	Total	%
Snake	65	23	88	93.3
Scorpion	01	02	03	03.3
Hymenopteran	01	00	01	01.7
Not specified	01	01	02	01.7
Total	68	26	94	100.0

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4. Discussion

We conducted a prospective study to analyze the characteristics of acute poisoning cases admitted to Yalgado Ouédraogo University Hospital in Ouagadougou. The data were collected through study of medical records, interviews with poisoned patients and medical staff. This allowed us to decreases the possibility of mistakes, to be quite comprehensive and highly objective in the description of the situation.

This study has shown the importance of acute poisoning and its distribution regarding age, sex, and the nature of poisons found by the medical emergency services. So, the children (up to 15 years old) were the most affected group [7-9], which showed a higher frequency of acute poisoning in kindergarten children and young adults. The same studies found that poisoning circumstances were mainly accidental in children and accounted for more than 65% of cases. This has been confirmed by our study which found as 70% of cases. This is in agreement with the literature [7, 9, 10] for the acute poisonings occur unintentionally except in the cases of suicide attempts which are really rare with children under 17.

The acute poisoning rate in children remains very high due to its accidental nature and the responsible substances. In other words, the most responsible substances were medicines and household products. In developing countries and particularly in Burkina Faso, self-medication and resorting to traditional medicine [1, 2, 11] have become a systematic and frequent practice. This is due either to poverty that made people not to go to health centres instead use of street drugs, or the social and cultural beliefs of our societies. The massive use of petroleum-based household products and pesticides in daily life can be another explanation. Some studies have shown that household products were responsible for 65% of acute poisoning in children [2, 12, 13]. The pharmacological and above all toxicological properties of several plants are not well known so it is necessary to study their pharmacology and clinical toxicology.

Regarding the care provided to poisoned patients, the use of ambulance is a systematic resort when our population is in danger. Indeed, some health centres have now ambulances to transfer their patients to more equipped centres. The care provision in emergency services consists of reacting in order to save the patient's life. On arrival of the poisoned patient, some actions are performed depending on the poison (gastric lavage, evacuating treatment, and symptomatic treatment). On the other hand, the antidote treatment was not used since the diagnosis was mainly based on the clinical signs, history taking, and physical examination. An antidote treatment based on toxicological analysis is not possible due to the lack of a toxicology laboratory. The outcome of the acute poisoning was positive in most cases despite the difficulties related to the lack of a standardized procedure to follow in encountering different types of poisoning, poison identification, special treatment problems, and the inadequate training of staff in clinical toxicology. Indeed, most cases of acute poisoning did not present any sign of seriousness. However, snake bite was the most serious and deadly poisoning because of the delay in transfer to the CHU [1, 14].

5. Conclusion

Among all the admissions to Ouagadougou CHU, acute poisoning has a noticeable status. Self-medication, use of traditional medicine, and massive use of household products can explain the high rate of acute poisoning in children at the CHU emergency services. The care provision to poisoned patients is done in a reasonable time span. The lack of suitable equipment and the different cares provided in the emergency services made it difficult to follow up these cases. The construction and operation of a medical toxicology services and training medical staff in toxicology are recommended in order to improve the care provision for patients with acute poisoning.

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Conflict of Interest

The authors declared no conflicts of interest.

References

[1] Ouédraogo M, Ouédraogo M, Yéré S, Yéré S, Guissou I. Acute intoxications in two university hospitals in Burkina Faso. African Health Sciences. 2013; 12(4):483-6. doi: 10.4314/ahs.v12i4.14

[2] Roche L. [Clinical toxicology. Training of doctors (French)]. Journal De Toxicologie Médicale. 1984; 12(4):83.

[3] Lee HL, Lin HJ, Yeh SY, Chi CH, Guo HR. Etiology and outcome of patients presenting for poisoning to the emergency department in Taiwan: A prospective study. Human & Experimental Toxicology. 2008; 27(5):373–9. doi: 10.1177/0960327108094609

[4] Islambulchilar M, Islambulchilar Z, Kargar-Maher M. Acute adult poisoning cases admitted to a university hospital in Tabriz, Iran. Human & Experimental Toxicology. 2009; 28(4):185–90. doi: 10.1177/0960327108099679

[5] Hocaoglu N, Kalkan S, Akgun A, Capar S, Tuncok Y. A retrospective evaluation of analgesic exposures from Izmir, Turkey. Human & Experimental Toxicology. 2007; 26(8):629–36. doi: 10.1177/0960327107076836

[6] Borges A. [CAP of Portugal, annual report (French)]. Journal De Toxicologie Médicale. 1984; 5(4):344-46.

[7] Akeassi MH, Timite- Konan AM, Adonis- Amangoua ES, Coulibaly RF. [Epidemiological aspects of acute pediatric intoxication in children in Abidjan (French)]. Médecine d'Afrique Noire. 2001; 48(11):457-460.

[8] Joubert P, Sebata B. The role of perspective epidemiology in the establishment of a toxicology service for developing community. South African Medical Journal. 1982; 2:854-58.

[9] Mignonsin D, Levorama P, Kane M. [Acute poisoning in children. Epidemiological study (French)]. Médicine D'Afrique Noire. 1991; 5(38):353-55.

[10] Sidibe T, Kone M, Keita MM, Coulibaly M. [Accidental intoxication in children. 36-month review of the pediatric ward at Gabriel Touré Hospital (French)]. Médecine d'Afrique Noire. 1991; 38(2):20-4.

[11] Nhachi CFB, Kasilo OMJ. The pattern of poisoning in urban Zimbabwe. Journal of Applied Toxicology. 1992; 12(6):435–8. doi: 10.1002/jat.2550120612

[12] Kane M, kapobi Y, Koffi K. [Intoxication in intensive care (French)]. Premières Journées D'anesthésie Réanimation D'Afrique Noire Francophone. 1984; 239-249.

[13] Mayanda H F, Senga P, Nizigoula S, Ndendet JP. [Attempt and suicides of the teenager at the Brazzaville University Hospital: About 93 cases (French)]. Médecine D'Afrique Noire. 1993; 40 (2):127-29.

[14] Akbaba M, Nazlican E, Demirhindi H, Sütoluk Z, Gökel Y. Etiological and demographical characteristics of acute adult poisoning in Adana, Turkey. Human & Experimental Toxicology. 2007; 26(5):401–6. doi: 10.1177/0960327107076818

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