The Incidence of Acute Diarrhea for Pediatric Ages in Hospital Center "Xhaferr Kongoli" Elbasan

Violeta Zanaj[a], Blerina Bani[b], Milidin Bakalli[a]
[a]Aleksander Moisiu University, Durres Albania
[b]Aleksander Xhuvani University, Elbasan Albania

Abstract

INTRODUCTION: Diarrhea diseases occupy second place after respiratory infections in general morbidity at childish age in our country, constituting a major public health problem.

PURPOSE: Determination of clinical criteria for the diagnosis of acute diarrhea, management in house conditions, determination of indicative criteria for hospitalization, treatment of associated symptoms and complications and preventive measures in childish.

METHODS: The study is descriptive retrospective. There were considered – sick children with diarrhea, hospitalized in the pediatric hospital in Elbasan for the period 2010-2015. The patients were evaluated for age, type of diarrhea, clinic, cause, complications, treatment mode and prognosis.

RESULTS: In the study are included 2011 sick children, with an average age of 0.5 ± 2 years; whereas 58% are males and 42% females. The study results noted that the age group of 1-4 years has the highest percentage of cases with acute diarrhea (1055 cases), whereas the main causes are the viruses (rotaviruses 36.4%), bacteria (shigella, salmonella 23.7%), parasites (Giardia Lamblia 7.1%) and unidentified (32.8%). Based on seasonally distribution, it is noticed that the percentage is higher during the coldest and hottest months of the year. The percentage of majority cases is higher in rural areas (80%) compared to urban areas (20%), which is related to the sanitary hygienic conditions. There are noted fluctuations from year to year, where 2011 indicates more cases (392) while 2012 less (253). There were studied clinical signs of children who were presented at hospital with: diarrhea, temperature and fever (84.3%), vomiting (68%), abdominal pains (53.8%), stool with blood and mucus (3.6%). The main treatment is ORS, antisecretory, antibiotics. Prognosis is good for all cases.

CONCLUSIONS: The study noted that cases of acute diarrhea are repeated with minor fluctuations from year to year; showing the importance of preventive measures, such as vaccination, isolation, improvement of sanitary hygienic conditions, food control, microbiological investigation and treatment of other possible causes of diarrhea.

KEYWORDS: acute diarrhea, rotavirus, prevention.

INTRODUCTION

Diarrhea is a defecation disorder, characterized by an increase of the daily amount and a change of stooling consistency. It can be acute if the duration is less than two weeks, persistent between two and four weeks and chronic if it persists more.

"The diarrhea is a disorder of defecation characterized by an increased issue of a daily AMOUNT of the upper stool 200 g with decrease of their consistency and by an increase of the discharge intestinal alvus frequency. It can be acute if the duration is less than two weeks, persistent between two and four weeks and chronic if it has superior durability(1).

Definition: Acute diarrhea is defined as an abnormally very frequent discharge of semisolid or fluid fecal matter from the bowel, lasting less than 14 days (2).

Modification in stooling consistency unlike the norm is a guiding indication for diarrhea diagnosis than the number of evacuations, especially in the first months of life.

EPIDEMIOLOGY AND INCIDENCE

AD disease is a major public health problem in most developing countries, whereas we belong too, but is also one of the main causes of diseases during childhood. In Europe, cases of diarrhea are from 0.5 to 2 episodes per child per year in patients under 3 years old. GEA (acute gastroenteritis) is a leading cause of hospitalization in this age group. Children between the ages of 6 and 32 weeks can be vaccinated against the virus with a vaccine called RotaTeq (3). Malnourished and children with immunodeficiency syndrome are most endangered by the AD.

ETIOLOGY

AD is usually a symptom of a digestive tract infection, which can be caused by various microorganisms, bacteria, viruses or parasites. Rotaviruses are the most common cause of severe diarrhea and dehydration in children (4). Recent information report that in the world population under 5 years old occur: 25 million consultations, 2 million hospitalizations and 440,000 deaths related to this infection.Clinical and epidemiological data are not good etiologic predicator. Lack of data for diagnosis of acute inflammatory diarrhea, the fact that stooling leukocytes are less sensitive to identify, Shigella and restrictions to test rotaviruses, often lead to overuse of antibiotics (5).

CLINICAL FEATURES

• Over 50% of children (Specifically <3 months of age) are asymptomatic, protected by trans placental antibodies (6).

• Gastrointestinal symptoms settle down within 3-7 days.

• are not rare and there are more than 20 episodes of vomiting and / or diarrhea in 24 hours

• Diarrhea can occur later than the vomiting and / or fever (10%)

• In 2/3 of hospitalized was found transition hyper transaminase ($\uparrow$2x v.n.) (7)

Complications and mortality are mainly related to dehydration, electrolyte disorders (dyselectrolytemia), acidosis and especially malnutrition and immunodeficiency syndrome. The essential purpose of dehydration assessment is to determine that some children can be treated at home with more security.

<u>Based on the weight assessment</u>

• Body weight loss <3% little or no dehydration

• Body weight loss 3-9% mild to moderate dehydration

• Body weight loss> 9%, severe dehydration

<u>Signs of significant dehydration</u>

(In the absence of data on the weight)

1) Refill time > 2"

2) Reduced turgor of the skin (interference possibilities: malnutrition, obesity, hypernatremia) is estimated from time of plik throwback of cutaneous

3) Increase of respiratory frequency

4) Increase of cardiac frequency

5) Status of consciousness (awareness)

6) Urine output (diuresis)

The presence of the first three parameters indicate dehydration > 5% (8).

TREATMENT

Oral rehydration therapy (ORT) is the administration of appropriate solutions by mouth to prevent or correct diarrheal dehydration. ORT is a cost-effective management of acute gastroenteritis, also in developed countries(9).Oral rehydration salts (ORS), used in ORT, contain specific amounts of important salts that are lost in diarrhea stool. The new lower-osmolarity ORS (recommended by WHO and United Nations International Children's Emergency Fund [UNICEF]) has reduced concentrations of sodium and glucose and is associated with less vomiting, less stool output, lesser chance of hypernatremia, and a reduced need for intravenous infusions in comparison with standard ORS (see Table 11 in the original guideline document) (10).This formulation is recommended irrespective of age and the type of diarrhea including cholera.

Principles of self-medication:

- Maintain adequate fluid intake.
- Consumption of solid food should be guided by appetite in adults; small, but more frequent meals for children.
- Antidiarrheal medication with loperamide (flexible dose according to loose bowel movements) may diminish diarrhea and shorten the duration.
- Antimicrobial treatment is reserved for prescription only in residents' diarrhea or for inclusion in travel kits (add loperamide) (11).

METHODOLOGY

The research is retrospective, analytical and observer between the period of 2010-2015, at the hospital center "XhaferrKongoli" Elbasan, which included medical records of children 0-14 years old hospitalized with symptoms of acute diarrhea. It was analyzed the age, gender, clinical-epidemiological aspects, method of feeding, auxiliary examinations, days with diarrhea, living place etc.

RESULTS

To analyze the results it was created a database where data were evaluated in the numerical and percentage values. There were reviewed the data of 2011 patients. The age distribution showed that the average age was 2 ± 0.5 years, whereas 58% were male and 42% female.(Fig.1,2)
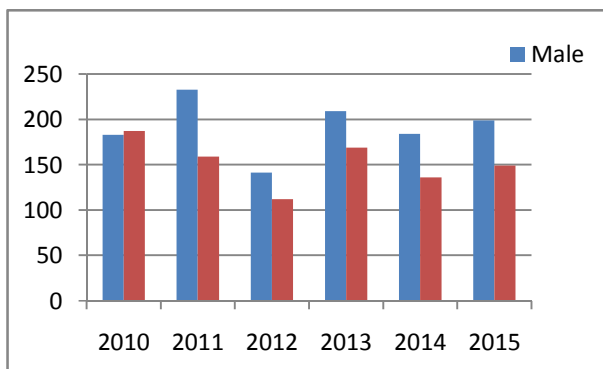

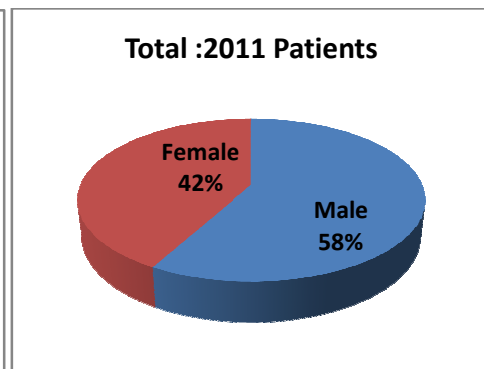Fig.1 Male female cases of patients   Fig.2 Percentage of male/female cases

Regarding the clinical data it was observed that in most cases, the diarrhea was accompanied by other signs: vomiting, abdominal pain and fever.

Only at 3.6% of cases were present stool with blood traces.(Tab.1)

Symptoms	%
Diarrhea > 10/24 h	99.20%
Vomiting > 5/24 h	87%
Temperature >39°C	84%
Abdominal pains	38%
Blood in stool	3.60%

Tab.1 Diarrhea symptoms

Given the clinical and laboratory data, it was clear that the main causes were viruses followed by bacteria. 32.8% of the cases remain unidentified.(Fig.3)
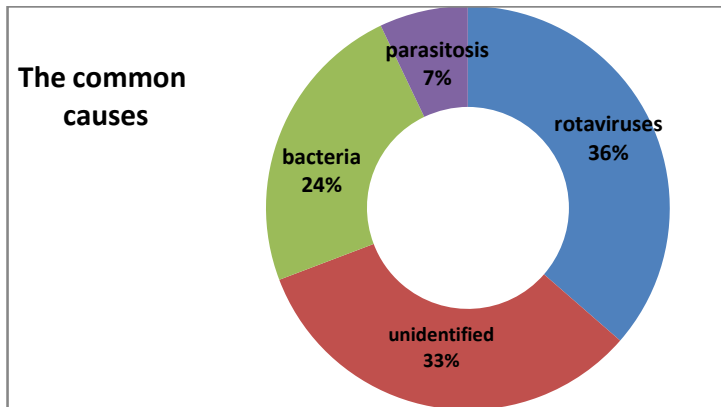
Fig.3 Different viruses and their percentages

Among the major complications remains dehydration, specifically in children <3 years old, with signs of a severe dehydration, and this as a result late delay in the hospital.(Tab.2)

Based on the residence distribution it was noted that the vast majority of cases were from rural areas and only 20% from urban areas. This shows the negative role of the lower socio-economic state, sanitation, malnutrition, lack of information and not implementation of preventive measures in AD.(Fig.4)

The degree of Dehydration	Nr	%
Dehydration Mild	974	48.43%
Dehydration Moderate	1018	50.62%
Dehydration severe	19	0.94%
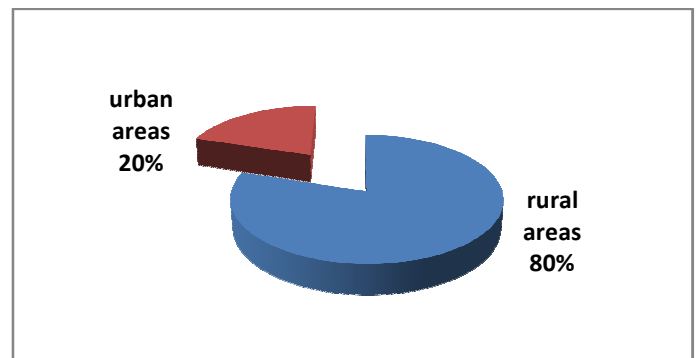
Tab.2 Dehydration degree   Fig.4 Acute diarrhea in urban and rural areas

It was noted that children who were breastfed had shorter hospitalization time and a mild and moderate degree of dehydration.

Table 3 shows the management of hospitalized children: 100% required oral and/or intravenous rehydration, associated with the use of other drugs such as H2 blockers (Ranitidine), playing a protective role for the stomach mucosa and antiemetic (Loperamide, Dimenhydrinate), regardless depressive effect they have in SNC, they have been widely used, and especially in cases associated with nausea.

Likewise was noted a routinely use of antibiotics although diarrhea was of viral nature, increasing in this way the risk of resistance by changing the microbial flora and often prolonging the stay in hospital.

Treatment	%
Hydration i/v	100%
Antibiotics	87%
Antiemetic	79%
H2 blockers	61%

Tab.3 Different antibiotics used for the treatment

In all cases the prognosis was good.

CONCLUSION

We found in our cases a trend where mostly there are children between the ages of 0-4 years old, highlighting the age group of 6-12 months. When the disease affects children healthy and well fed it is self-assimilated.

It is important to clearly define the diagnostic criteria, since most of the patients can be managed in home conditions. It must be renounce the empiric use of antibiotics. There is a need for rapid diagnostic tests for causes of AD, the use of oral rehydration salts, to not be abused with the therapy i / v or other drugs and especially antibiotics(12). It is known the effect of breastfeeding as protector and immunomodulatory, shortening in this way the stay in hospital. It must be improved the life quality and added care for children.

Preventive measures are important such as: health education, vaccination, isolation, improvement of sanitary conditions, control of nutrition, drinking water, microbial investigations and treatment of other causes of AD(13)

REFERENCES

[1]Harrison, Principi di Medicina Interna, 16ª ed., Milano, McGraw-Hill, 2005, ISBN 88-386-2999-4.
[2] World GastroenterologyOrganisation (WGO)[3]Modificata da Sci. Am. 2006; 294(4): 46
[4]Francavilla R. – SIGENP 2009 JPGN. 2008;46:181
[5]Davidson G, et al. J PediatrGastroenterolNutr 2002; 35 (Suppl 2): S144
[6]DIA bibliog J Infect; 2000; 182
[7]J PediatrGastroenterolNutrbibliog 1986: 5
[8]NICE 2009
[9]Harris 2005 -AustralianGuidelines[10]NICE 2009 -BritishGuidelines[11]Unigastro, Malattie dell'apparato digerente, Utet, Torino
[12]R. Della Loggia, a cura di, Piante officinali per infusi e tisane. Manuale per farmacisti e medici, OEMF, 1993
[13]V. Fintelman, R. Weiss, Lehrbuch der Phytotherapie, Hippokrates, 2002 ISBN 3-8304-5243-8