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CLINICAL CASE OF CHILD WITH ROTAVIRUS INFECTION, DIFFICULT DURATION

O. M. Horlenko, N. M. Stoyka, M. A. Polyak, M. V. Bychko

*Uzhgorod National University, Medical Faculty, Department of Pediatrics with infectious diseases,
Regional Clinical Infectious Hospital, Uzhgorod, Ukraine*

Introduction

There are a number of viruses that infect human intestines and create numerous difficulties inside the body. Rotavirus is one of them. Rotavirus is the most frequent cause of viral gastroenteritis worldwide. A research report has found that the number of died children due to the infection is approximately 6,00,000 around the world. The name of this virus has been taken from a Latin word 'Rota' which means wheels. Physicians say that the virus looks like a wheel under a microscope. A research report says that in the countries like the US, every year approximately 2,00,000 children get the infection of this virus and among them near about hundred children die. The virus can be found in the developing countries and among the inhabitants of all socio-economic conditions. The areas, which have a high growth of industrialization, will also suffer with this. Thus, the medical experts say that this infection does not have any connection with water hygiene or poor conditions of the atmosphere. [1,2]

Earlier, in the year 1943, two scientists observed that a type of virus, which is found in the intestines of a child, is very much similar to another virus which is found in the cattle or livestock. Later, in the year 1974, another scientist Thomas Henry Flewett observed the virus looks like a wheel when seen under a microscope and kept its name as Rotavirus. The International Committee of Taxonomy of Viruses accepted the name legitimately, after some years. In the later years, the virus was also observed in some of the animals. Some of the researches saw that the virus was creating infection and resulting in gastrointestinal illness. In the year 1998, in the US a vaccine for this infection was introduced. Later the countries like Finland, Venezuela found the vaccine perfectly affective among the patients. In the year 2009, the World Health Organization recommended the vaccine,

and spread the awareness among people in all the national immunization concepts.

In Ukraine on a Rotavirus infection are from 35 to 75 % cases of acute enterocolitis. Rotavirus infection (RVI) is the most frequenting of the difficult dehydrating diarrhea. In countries which develop, rotavirus cause by over 850 000 cases of death. In Ukraine on RI is from 35 to 75 % all of cases of acute gastroenteritis. The virus generally affects the children who are in the age group of six months and two years. The infection can occur several times and with different symptoms. The infection can also affect the adults; however, the Rotavirus symptoms will be very tender. If the infection occurs several times in a patient, he/she can develop resistance power to the virus. According to the US Food and Drugs Administration, there are three types of the Rotavirus like Rotavirus A, Rotavirus B and C. The type A generally infects the children. The Type B Rotavirus also medically known as ADRV or adult diarrhea rotavirus. The type C is very rare type of Rotavirus. [1,2]

The rotavirus Infection can spread very easily from one person to another. If infection generally spreads though the inhalation of infected air and the infection generally affects the nasal area. If a person touches the contaminated hands or eat any contaminated food or drink contaminated water can have the infection and illness. The respiratory route is the many way of infection. It can also transport from one infected person to another through sexual relation. A research report in the US has found that the infection of the virus is there in the environment. It also happen if an infected stool goes inside the mouth of another child.

The person, who gets the Rotavirus infection, usually suffers with the Rotavirus symptoms within two to three days. The illness that occurs through the infection results in fever, headaches, vomiting, nausea, pain in



the abdomen and diarrhea. The diarrhea will be very watery and can occur with cramps in seven cycles a day. These Rotavirus symptoms stay for three days to ten days. If the patient gets the infection many times, he/she can have the resistance to it and if the infection occurs repeatedly, the symptoms will be less serious. However, several occurrence of the infection, can lead to dehydration because of the loss of water by diarrhea. The case of dehydration can be seen especially in the children. If the dehydration is severe, it can also result in death. In a severe condition, the patient can also have exhaustion, lack of tears in the time of crying, sticky and dry skin on the body and areas around the mouth.[1,3]

The diagnosis process of the virus starts with the test of the gastroenteritis, which is the main cause of diarrhea. In the countries like the US, a large number of children who go for a hospitalization are found infected with this virus. The clinical test includes a urine and stool test. The stool test is very important in case of diarrhea. At times, the infection can also found in the blood stream. The other test will also include a polymer chain reaction or enzyme immunoassay. Medical experts say that currently, there is no any specific treatment for rotavirus infection. The virus results in less infectious condition if a person has a strong immune system. The person with a strong immune system can overcome within a few days. He may do the treatment in home with a self-assessment program. The children who suffer with serious infection are given, fluid supplements through the veins.[1,2,3]

Objectives

To determine the characteristics of rotavirus-associated hospitalizations among children under five years of age of Regional Clinical Infectious Hospital, Uzhgorod, Ukraine To conduct the analysis of case of difficult duration of Rotavirus disease in the child.

Case presentation

An 15-month-old girl was initially admitted to Regional clinical infectious hospital because of fever up to 39.9°C. lasting for fore days he had a mild cough, one to two vomits and two to three yellowish diarrheas per day. On moment of appeal there were nausea, multiple incessant vomit, diarrhea very watery more over 20 times per day. Tests of a rotavirus

infection was positive (stool samples tested positive, CERTEST – biotec, Rota-aden +, Ispania).

By anamnesic dates On an evening in the girl suddenly was temperature up to 39°. The patient used antipyretic medicine. On the second day of disease will associated the watery diarrhea over 2 times per days, which was during 4 days and increased to 20 times He had later appeared of nasal obstruction, mucous excretions, coughings too..

Anamnesis vitae girl was borns from the second physiology births. Mass at birth was 3800 gramm. Vaccination according to age. In the past she have acute infections of upper respiratory tracts.

Allergist anamnesis is not burdened

Epidemiology anamnesis. Week before to the begining of Rotavirus disease of girl with syndrome of diarrhea a older child in the family have similar clinical signs nondiagnostic geneses. For medical care did not apply.

On examination

On admission she presented with a fever of 38,4°C. the general condition was grave, nutritional status satisfactory. Consciousness is clear. Temperature of body 38,4gr. Meningeal signs are negative. Skin are pale, the marbleness of overhead and lower extremities is marked, cold. Rash was absent. Eyeballs was deep.

The nasal breathing is obstructive, rhinorhea. The mucus membranes of oral cavity are rose, pharynx was reddish. Lips cyanotic, dry. Language – dryish, thickly. Lymph nodes unchanged Cardiac activity is rhythmic, tones are soft. Ps 148 per 1 min. At lights there is the reveal of breathing, rales not identificate. Tashipnoe. A stomach is distension, flatulence, sensible by palpation in an epigastrium and for for the projections of intestine. A peristalsis is hyposthenic. Liver enlargement +2,5 A lien is in the referenece valua. . Urine excriton was diminished (according to date of mother).

A previous diagnosis is set: «Acute gastroenterocolitis, grave duration, Toksikoz – exsiocos. II – III. Nazofaringit. Hyperthermal syndrome».

An inspection and treatment did according to protocols of medicare for children with Rotavirus diseases in Ukraine.

A diagnosis is confirmed and patient got adequate treatment

Laboratory findings during the course of the RI



Table 1

A general analysis of Peripheral blood during the course

Dates	Hb of gramme/l	Er 10*12	L 10*9	ESR mm/hour	Neu %	Eoz. %	Limf. %	Mon. %
30.05.11	98	4,2	12,2	6	26	1	68	5
05.06.11	102	4,3	10,5	4	49		48	3
10.06.11	106	4,3	9,27	6	46	2	46	6

Laboratory evaluation revealed leukocytosis (12,2/10⁹) with 26 % neutrophils and an erythrocyte sedimentation rate (ESR) (6,4,2 mm/1st hour duration) (100 mg/l) (table 1).

A general analysis of urine (ZAS) 30.05.11

Unchanged, Diastase of urine – 286,1 g/hour*l., 10.06.11 Diastase of urine – 40,1 g/hour*l.

3. An feces (1.06.11) – n/a.

4. Coproscopy – without features.

5. Electrolytes of blood - K - 3.02, Na – 127, Cl – 96,2.(mmol/l)

6. Hemostaziogram – without features.

Table 2

Biochemistry exazamenation of blood serum

Dates	Biluru Binum Mmol/l	Albu min %	Gen pro- tein gramm/l	ALT Mmol /l	AST Mmol /l	GGT Mmol /l	Сечо- ина Mmol/l	Kreat- inin Mmol/l	LF Mmol/l	Tim testp.	Glucosa Mmol/l
1.06.2011	22,6	41	53	48	92	21	3,14	32,3	297	2,1	2,8
10.06.2011	15,1	43	58	32	45	18	3,18	55,2	131	1,4	4,2

Table 3

Laboratory examination of blood serum during the course of the RI

Dates Of blood serum Mkg/l	fe	Cu	zn	p	i	Il-1	Il-6	TTG	IgG	IgM	AFL IgM	AFL IgM
	31,3	7,59	0,67	67,2	0,76	0,22	5,30	3,17	3,07	0,33	1,67	2,14

Table 4

Laboratory examination of urine during the course of the RI

Dates of urine mkg/l	fe	cu	zn	p	i
	0,41	1,76	733	819	18,9

8. Examenation of feces on a pathological flora – not found out (from 3.06.11đ.).

9. Quicly test on viruses – adeno – negative, rotavirus – positive (30.05.11đ.)

10. Ultrasonic research of organs of abdominal region (30.05.11): it is a liver enlarges + 2,5cm; contours are clear, levels; an edge rounds. A parenchima is homogeneous, hyperecho- genic. Portal vein – reference valua. Gall-bladder, lien – unchanged. Pancreas – enlarged caput, enhanceable of parenchima.

11. Consultation of ORL.

13. Without corresponding pathological findings in X-ray.

For period of treatment a child had Consultation of specialists. With the purpose of treatment a girl used antibacterial therapy, inductors of interferons in the doses according to age, intensive enteral (through a nasogastric

way) and parenterally regidratation therapy was conducted it, detoxication, symptomatic therapy.

After the conducted medical measures on the 5th day of stay in hospital was positive



dynamics marked in control in general lines - clinical indexes. On 11 day the girl excribe at home after the conducted treatment and normalization of Clinical - laboratory dates with the proper recommendations.

The final diagnosis:

«**Rotavirus** disease (cito test rota – posit.), associated with the type as gastroenterocolitis, rhinofaringitis, difficult duration. Toksikoz – exikoz, Degrii II – III. Reactive pancreatopathy. Anaemia, degree I ».

Discussion

In our investigation, conducted in a region hospital, Uzhgorod in Ukraine RI was identified in 70% of children admitted with diarrhoea. Our incidence estimates include only the children who present to hospital with diarrhoea. Per 2010 year were 171 children with identified RI diarrhea (age 1-5 years) (stool samples tested positive, CERTEST – biotec, Rota-adeno +, Ispania) The prevalence was highest in the youngest children (age from 1 to 3 years). The patients with RI have such syndroms: gastrointestinal – 80%, Catarrhal – 20%. There were a decline of levels of copper of blood serum, zinc and iodine, at the insignificant increase of level of iron. Research of mineraluria in children gave the reference level of all investigated oligoelementss and phosphorus. In the patients with RI was identified the disbalance of minerals of blood serum with association of their unchanged elimination. This dates presents the necessity of mineral ocorrection in the patients with RI Increase of efficiency of Medical prophylactic

measures of any disease possibly only on the extended study of changes at all levels of child's organism, including a mineral homoeostasis. The ultrasonic inspection of organs of abdominal region in 38 (42,2 %) children was found out multiplying changes of liver on 1,5 – 2,0 %. Echografic changes of pancreas were identified in 60 (66,6 %) children as reactive changes of organ.

Conclusions

1. RI is charactericted of unspecificity of clinical signs and acute beginning of disease, combination with acute gastroenteritis, colitis, syndrome of intoxication and respirator syndrome which need the identify of it laboratory confirmation.

2. **Most frequency of RV** diseases is prevalence in children in age from 1 to 3.

3. A significant association was found between hospitalization for ending of deiseases.

3. The degree of difficult condition connect with the late appeal of parents of child for medical care what caused by slow positive effect of disease, difficult duration.

4. Universal mass vaccination programs would seem to be the most appropriate approach to controlling the burden of rotavirus disease

5. All of foregoing is pre-condition of lead-through of deep researches for the study of the condition of mineral profile in the children with RI show new positions to specify and new knowledge of pathogeny of disease, extend possibilities of optimization of his diagnostics and adequate therapy.

Summary. A clinical case of rotavirus infection in a 15 months old child is presented in the article. The necessity of a mass vaccination program among young children is shown to provide protection against severe forms of rotaviral gastroenteritis.

Key words: rotavirus infection, acute gastroenterocolitis, vaccination.

Клінічний випадок важкого перебігу ротавірусної інфекції у дитини

О. М. Горленко, Н. М. Стойка, М. А. Поляк, М. В. Бичко

Резюме. В статті здійснено аналіз клінічного випадку важкої ротавірусної інфекції у дівчинки віком 15 місяців. Відмічено доцільність проведення програм масової вакцинації з метою профілактики ротавірусної інфекції у дітей.

Ключові слова: ротавірусна інфекція, гострий гастроентероколіт, вакцинація.

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