

Effectiveness of Aciclovir Treatment of Encephalities and Cerebral Dishaemia Caused by Viral Intracranial Infections

Ia Rukhadze, Manana Gordeziani, Nino Ninua

Neurology Department of Tbilisi State Medical University

Abstract

The purpose of the study was differential diagnosis and treatment of cerebral dishaemia and encephalitis, caused by intracranial viral infections. Neurovisual methods of investigates were used: CT, MRI and doplerography, IgM and IgG-antibody test in blood and cerebrospinal fluid, blood test for immunoglobulin examination by turbidimetric method and examination of lymphocytes. 39 patients were observed, 17-encephalitis and meningoencephalitis, 22-cerebral circulation disturbances (11-ischemic stroke, 5-intracerebral haematoma, 6-TIA). Data revealed IgM and IgG in all cases. Thus, antiviral and immunomodulative treatment was carried out together with vasoactive medication. Acyclovirotherapy is the method of chose, which should be used also in preventive purpose in poststroke period.

Keywords: *encephalitis, cerebral dishaemia, herpes virus, aciclovir*

Introduction

Development of viral infections (HSV, HSV2, HZV, EMR, EBV) in human body was significantly increased in recent years. According to differential diagnosis most interesting are: encephalities, meningoencephalitis and various types of cerebral dishaemia (ischemic, intracranial haematoma and transient ischemic attacks) caused by viral infection. Damage of vessels endothelien cells directly by virus result in neurological symptoms mentioned above (1).

These symptoms involve: damage of small vessels like vasculities, also injury of large vessels with development of angiitis (2, 3). Differential diagnosis among these diseases need exact differentiation for performing timely and nondifferentive treatment, with determining of prognosis of disease. Besides this, as disease is frequently recurrence treatment by Aciclovir, vasoactive and immunostimulated drugs has also preventive meaning (4).

Material and methods

39 patients (22 - women, 17 - men) were observed from 25 up to 75 years old. Among them: 11 encephalities, 6 - meningoencephalities, 22 - disturbance of cerebral blood circulation, 11 - ischemic stroke, 5 - intracerebral haematoma, 6 - transient ischemic attacks.

Various methods were used in study:

- 1) CT-scan;
- 2) MRY;
- 3) Dopplerography;
- 4) Laboratory investigations:
 1. Human-Eliza-VZV IgM and VZV IgG Antibody tests (Enguall, 1971).

NEUROLOGICAL SYNDROME	NUMBER OF PATIENTS	MATERIAL	ANTI VZV IGM		ANTI VZV IGG	
			pos	neg	pos	neg
1. Encephalities	11	blood	4	7	11	-
2. Meningoencephal	6	blood	3	3	3	3
		CSF	-	-	4	-
3. Ischemic stroke	11	CSF	5	6	6	-
4. Intracerebral haematoma	5	blood	3	2	2	-
5. Transient ischemic attacks	6	blood	3	3	6	-

Tab.1 Results of blood serological tests.

2. "Herpes-Screen" - test system

3. IgA, IgM and IgG Antibody tests by turbidimetric method (Manchini)

4. Determining of Lymphocytes (CD3, CD4, CD19) by immunofluorescent method.

Data of CD4/CD8 (N 1,5-2,5) were decreased in all cases that indicates at the immunodeficit condition.

Revealing of IgM and IgG antibodies is the diagnostic criteria, although specific IgG antigens are revealed during all life in persistent infections. In the purpose of differential diagnosis serological tests were done for other viruses (HSV, HSV2, CMV, EBV) that didn't revealed repositive result.

Thus, mentioned neurological syndromes were treated by Aciclovir (10-15 mg/kg for 5-7 days), immunomodulative drugs such as: Tactivin or Thimalin: Actovegin (5-10 ml i.m. for 7-10 days) and Curantil (0,25-0,50 ml 3 times daily). Nondifferentive treatment was added to this in cases of cerebral blood circulation disturbances.

Data revealed: in cases of encephalitis and meningoencephalitis improvement was mentioned at 2-3 day of treatment. Complete recovery was obtained in

Results and Discussion

Differential diagnosis between meningoencephalities and cerebral dishaemia was performed by neuromaging methods, determining of aetiological factor was based on above mentioned methods (1, 2).

Results of blood serological tests are shown in table:

acute cases and steadfast neurological symptoms remained in recurrent cases (6 cases). 2 cases of meningoencephalities were lethal.

Improvement was achieved at 4-5 days in cases of both types of cerebral blood disturbances. From 11 cases of ischemic stroke, 6 recovered, they had various localization of ganglionities which underwent antiviral treatment. In these cases the only remained symptom was mild hemiparesis. In recurrent cases with cerebral blood disturbances when treatment of ganglionities by Aciclovir wasn't performed in time, local neurological symptoms remained steadfast.

2 cases had lethal outcome because of the involvement of internal organs in pathological process (alveolitis, coronaritis). Antiviral treatment of intracerebral haematomas has satisfactory outcome and poor result is determined by localization, volume of haematoma and blood penetration into ventricles.

All cases of transitor ischemic attacks were connected with ganglionities (injury of spinal or cranial nerves) with or without revealed dermatosis ("zoster sine herpate").

Conclusion

Nervous system damage like encephalities, meningoencephalities, cerebral blood disturbances associated with viral infection need antiviral,

immunomodulative and vasoactive treatment that ought to be considered as method of differentiative treatment.

According to virus persistent mechanisms to avoid relapse of disease antiviral treatment ought to be performed in preventive purposes in poststroke period.

The differential diagnostic criterious of neurological syndromes caused by intracranial infections are serological tests of blood and cerebro-spinal fluid.

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Эффективность применения ацикловира при энцефалитах и церебральных дисгемиях, вызванных интракраниальными вирусными инфекциями

Ия Рухадзе, Манана Гордезиани, Нино Нинуа

Кафедра неврологии Тбилисского государственного медицинского университета

РЕЗЮМЕ

Целью работы являлась дифференциальная диагностика и лечение церебральных дисгемий и энцефалитов, вызванных интракраниальными вирусными инфекциями. Для диагностики применялись нейровизуальные методы исследования: КТ, МРТ и доплерография, определяли в сыворотке крови и церебро-спинальной жидкости специфические антитела классов IgM и IgG (в крови турбидиметрическим методом), содержание лимфоцитов и их субпопуляции. Обследовано 39 больных, среди которых 17 – с энцефалитом и менингоэнцефалитом, 22 – с нарушениями мозгового кровообращения, (11 - ишемический инсульт, 5 - интрацеребральная гематома, 6 - транзиторные ишемические атаки). Исследование показало, что во всех случаях в сыворотке крови выявляются специфические IgM или IgG. Исходя из этого, применялись противовирусные и иммуномодулирующие препараты вместе с вазоактивными медикаментами. Ацикловиротерапия является этиологически обоснованной терапией, которая должна применяться не только для лечения этих нарушений, но и с профилактической целью в постимпульсном периоде.

Ключевые слова: энцефалит, церебральная дисгемия, герпес вирус, ацикловир