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CONSEQUENCES OF MUMPS INFECTION IN ADULTS (BASED ON THE EXAMPLE OF SAMARKAND REGION)

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✓ ***Resume***

Vaccination is an effective and cost-effective method of preventing infectious diseases. The introduction of the vaccine against measles, mumps and rubella into the national vaccination calendar of the republic in 2007 led to a decrease in the incidence of this disease several times compared to previous yea. However, despite all the progress, it is noted that the incidence of mumps in adults has increased relatively. The inclusion of adolescent children and adults in the epidemic process is due to their lack of collective immunity. To reduce the spread of the disease among adults, patients need to be isolated and hospitalized. In this article, we analyzed the features of the disease course and outcome in adults.

Key words: adults, mumps, serous meningitis, asthenoneuric syndrome.

ПОСЛЕДСТВИЯ ЭПИДЕМИЧЕСКОГО ПАРОТИТА У ВЗРОСЛЫХ (НА ПРИМЕРЕ САМАРКАНДСКОЙ ОБЛАСТИ)

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✓ ***Резюме***

Вакцинация является эффективным и малозатратным методом профилактики инфекционных заболеваний. Введение вакцины против кори, эпидемического паротита и краснухи в национальный календарь прививок республики в 2007 году привело к снижению заболеваемости этим заболеванием в несколько раз по сравнению с предыдущим годом. Однако, несмотря на весь прогресс, отмечается, что заболеваемость эпидемическим паротитом у взрослых отмечается. Вовлечение в эпидемический процесс детей подросткового возраста и взрослых обусловлено отсутствием у них коллективного иммунитета. Чтобы уменьшить распространение заболевания среди взрослых пациентов необходимо изолировать и госпитализировать. В этой статье мы проанализировали особенности течения и исходов заболевания у взрослых.

Ключевые слова: взрослые, эпидемический паротит, серозный менингит, астеноневрический синдром

КАТТАЛАРДА ПАРОТИТ КАСАЛЛИГИ ОҚИБАТЛАРИНИ ТАҲЛИЛ ҚИЛИШ (САМАРҚАНД ВИЛОЯТИ МИСОЛИДА)

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✓ ***Резюме***

Юқумли касалликларнинг олдини олишнинг самарали ва арзон усули эмлашдир. 2007 йилда республикамизнинг миллий эмлаш тақвимига қизамиқ, паротит ва қизилчага қарши вакцинанинг киритилиши ушбу касаллик билан касалланишнинг ўтган йилларга нисбатан бир неча бор камайишига олиб келди. Бироқ эришилган муваффақиятларга қарамай, статистик маълумотларга кўра катталар орасида паротит билан касалланиш кузатилиши қайд этилган. Ўсмир болалар ва катталарнинг эпидемия жараёнига жалб қилиниши уларда жамоавий иммунитетнинг йўқлиги билан боғлиқ. Катта ёшдаги беморлар орасида касалликнинг тарқалишини камайтириш учун уларни изоляция қилиш ва касалхонага ётқизиш керак. Ушбу мақолада биз катталарда касалликнинг кечиши ва оқибатларини таҳлил қилдик.

Калит сўзлар: катталар, паротит, сероз менингит, астеноневретик синдром

Relevance

Mumps infection is an acute infectious disease occurring with fever, general intoxication, damage to the internal glands (salivary, genital, pancreas, submandibular, sublingual, mammary), and damage to the central nervous system [3, 5]. Mumps infection belongs to the group of infectious diseases, the causative agent of which is a highly contagious virus that has the property of rapidly spreading among the population. In some cases, irreversible changes in the nervous system are observed during the course of the disease. Vaccination is an effective and cost-effective method of preventing infectious diseases [4, 9].

When using vaccinations to prevent mumps infection, there was a tendency to reduce the incidence. The introduction of the vaccine against measles, mumps, and rubella into the national vaccination calendar in the Republic of Uzbekistan in 2007 led to a several-fold decrease in the incidence of these diseases compared to previous years [7, 9]. As a result, the epidemiological situation in our republic has become much more stable in terms of mumps infection. Currently, vaccination against this disease is included in the national vaccination calendar of 38% of the world's countries; reducing the incidence of this disease and implementing preventive measures have not lost their relevance to this day. However, this does not mean that this disease does not occur among adults. In recent years, there have been minor changes in the structure of the disease. That is, there is an increase in the age of the sick. The inclusion of adolescent children and adults in the epidemic process is due to their lack of collective immunity [1, 2, 3]. This is also closely related to the process of labor migration between states. As a result, mumps infection spreads among this category of the population. In adults, the manifestation of mumps infection is severe, which in some cases leads to serious complications. In adults, mumps infection has specific characteristics. Mumps infection in adults is characterized by a severe course, causing various complications, including such serious complications as pancreatitis, serous meningitis and orchitis. Neurological signs of serous meningitis of mumps etiology are observed in the late period after the illness. During the period of early recovery, cerebrasthenic and asthenoneurotic syndrome is observed.

Modern features of the epidemiology of mumps infection in the Republic of Uzbekistan are also determined by the routine immunization of the child population with a live mumps vaccine, carried out since 2007. Vaccine prevention has changed the duration of the epidemic cycle upward (by 8-10 years or more) and gender and age susceptibility. During the period 2007-2017, incidence occurred in 36.9% of cases among adolescents and adults. The infection “matured”, and the risk of adverse consequences increased, such as cerebrasthenic syndrome, intracranial hypertension, chronic pancreatitis, diabetes mellitus, and due to testicular atrophy - male infertility and impotence [2, 4, 5].

In some cases, 3 months after the disease, diencephalic syndrome develops. Its duration is up to 2.5 years. According to literature data, 38-70% of patients after serous meningitis have residual manifestations, such as cerebrosthenic (39-45%), asthenoneurotic (12-30%) and hypertensive (8.6-12%) syndromes, which usually develop on 2-3 weeks of illness [1, 6, 7, 8]. Therefore, mumps infection in adults has become an urgent problem in modern medicine, which served as the basis for conducting this study.

Purpose of the study: analysis of neurological changes in serous meningitis (mumps etiology) in adults.

Material and methods

The research material is patients who applied to the Regional Clinical Infectious Diseases Hospital of the Samarkand region over the past 10 years, and their medical histories. The subject of the study is blood, urine, blood serum, and protocols of examined patients.

The examination methods used were clinical, epidemiological, laboratory - general blood test, general urinalysis, general stool analysis, biochemical, serological, ELISA and statistical methods. In combination with standard examination methods, in certain patients, if necessary, an analysis of the prothrombin index, blood coagulation system, protein and protein fractions, determination of the level of alkaline phosphatase, amylase and cholesterol, and liquor fluid was carried out. From instrumental examinations, an ultrasound examination of the liver, pancreas, prostate, and testicles was performed.

Result and discussions

For this purpose, in 2009-2018, a retrospective analysis of the medical records of patients treated at the Regional Clinical Hospital with a diagnosis of mumps infection was carried out. Adults made up 26.7% of hospitalized patients diagnosed with mumps infection. During observation, we focused on the epidemiological factors of this disease at the present stage, age characteristics with concomitant diseases.

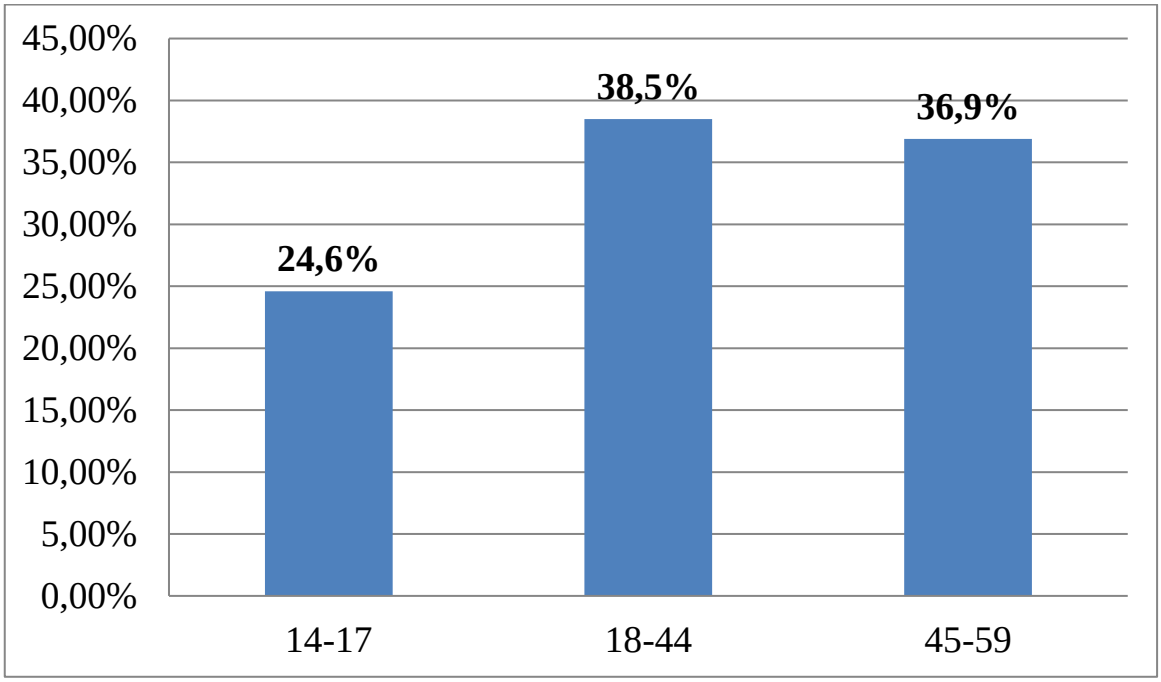

Figure 1. Distribution of patients by age

According to the analysis results, distribution by age. This disease was relatively common among adults in the following age range: 18-59 years (75,4%). The age range of the remaining patients was below 17 years - 24.6% (Fig. 1). Analyzing the age structure of patients, one can notice that this disease is “maturing.”

Comorbidities were also studied in the adult patients observed. Thus, 56.7% of patients had the following concomitant diseases: obesity - 13.4%, arterial hypertension - 3.2%, cholecystitis - 9.8%, chronic viral hepatitis - 3.2%, chronic tonsillitis - 25.3 %, chronic colitis - 1.7%, neuritis of the facial nerve - 4.3%, chronic gastritis - 11.5%, chronic pancreatitis - 8.7%, chronic sinusitis - 7.6%, adnexitis - 11.3% and b.

According to patient bed days, up to 5-10 days - 11.3% of patients, up to 10-16 days - 25.2%, up to 16-25 days - 30.5%, up to 25-30 days - 22. 4%, more than 30 days - 10.6%. When a combined form of the disease was observed in patients under observation, an increase in bed days was recorded in patients (32.7%).

In terms of seasonality of the disease, patients were treated: January -6.8%, February -12.9%, March - 8.6%, April -8.6%, May - 5.1%, June - 5.1% , July – 8.6%, August – 13.7%, September – 10.3%, December – 11.2% (Fig. 2).

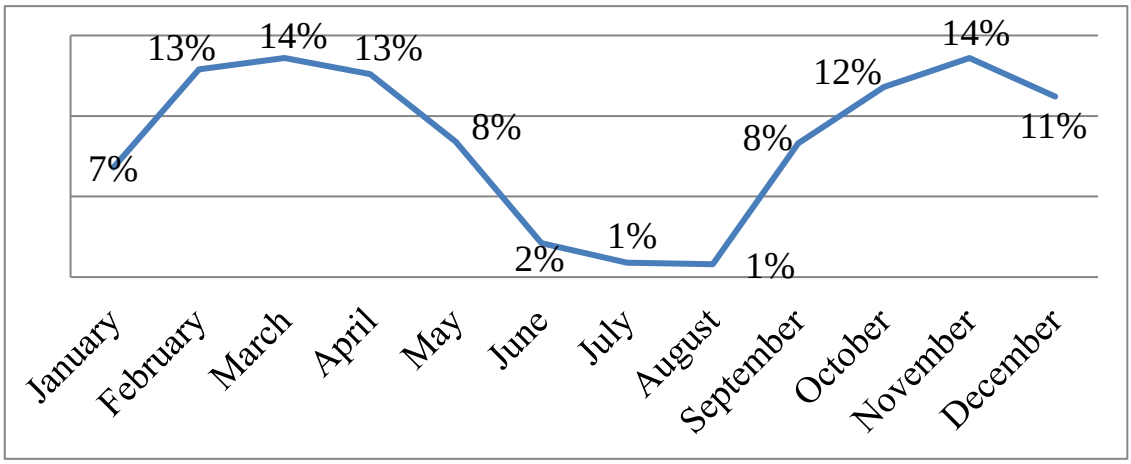

Figure 2. Distribution of patients by month of the year

The study revealed that the spring and autumn months occupied the main place in the seasonality of the disease (Fig. 2).

6.5% of patients were hospitalized on the 1st day of the disease, 43.3% on the 2nd day, 45.6% on the 3rd day of the disease, 4.6% on the 4th day. Patients are mainly hospitalized on the 2-3rd day of illness (88.9%).

According to the researchers, it was found that in adults the disease occurs mainly in moderate to severe forms. This case was also confirmed in our observations. Moderate and severe forms of the disease were observed in 85.7% of cases, mainly in patients aged 18-59 years. A mild form of the disease was observed mainly in 17-18 year olds.

The disease began acutely in all patients. In patients, the disease began with an increase in body temperature (100%) and the appearance of swelling in the projection of the earlobes. The main symptom of mumps is enlarged glands. This symptom appeared on the 1st day of the disease, excluding 70% of cases. Bilateral gland damage was caused in 16.9% of patients, in 79.7% of cases. In all patients, the gland was soft and slightly painful on palpation. Filatov's sign was found positive in 100% of patients. Patients experienced the following symptoms: fever (100%), weakness (100%), nausea (55.7%), pain when chewing (98.7%), decreased salivation (56.7%), dry oral mucosa (67.5%), reflex trismus (34.5%), pain in the abdominal area (23.4%). Fever peaked within 1–3 days and lasted 4–8 days. Fever was observed in patients lasting up to 3 days (80%), in 16% - up to 5-6 days, in 4% - up to 7-8 days.

Paying attention to the clinical forms of mumps infection, it should be noted that pancreatitis (22.6%) was observed in female patients. It was found that within 25-30 days of the disease there was a decrease in clinical signs of the disease and normalization of the amount of enzymes in the blood. In the remaining patients, treatment of pancreatitis was carried out qualitatively, and no unpleasant consequences were observed. Among women, the following combined forms of the disease were encountered: mumps + submandibular arthritis (11.8%), mumps + pancreatitis (13.6%), mumps + submandibular arthritis + pancreatitis (12.7%), mumps + pancreatitis + oophoritis (9, 5%), mumps + submandibular arthritis + sublingitis (8.7%). It is noteworthy that among women, these combined types of diseases were identified against the background of concomitant pathologies, in recent years: obesity – 7.2%, adnexitis – 11.3%, cholecystitis – 4.4%, pancreatitis - 3.3%, chronic tonsillitis – 12.1%.

Among men, orchitis + mumps in a combined form of the disease was observed in our observations in 43.7% of cases. This symptom was mainly observed in dynamics in recent years and was observed in 8.7% of children under the age of 17 years. Among men, the following combined forms of the disease were encountered: mumps + orchitis + meningitis (17.7%), mumps + orchitis + pancreatitis (17.2%), mumps + orchitis + submaxillitis + meningitis (8.8%).

Among men, the glandular form of mumps infection was detected in 78.8% of patients, while the combined form was detected in 21.2% of patients. Meningeal symptoms were caused by increased intoxication. The following positive meningeal signs were found in patients: superior Brudzinski sign in 67%, stiff neck in 87.7%, Kernig's sign in 65.3%. The remaining meningeal signs are weakly expressed. No pathological reflexes were observed. Meningeal symptoms occurred on the 7-10th day of the disease and persisted for 10-15 days. In 70.8% of patients the disease was severe. In two patients the disease occurred in the form of meningoencephalitis. Acute neurological signs of the disease were observed mainly in the form of meningoencephalitis.

All patients in the acute period underwent clinical and neurological monitoring, including assessment of the severity and duration of intoxication symptoms, meningeal, cerebral, focal and neurological symptoms, as well as lumbar puncture followed by analysis of cerebrospinal fluid (pleocytosis and protein). The severity of serous meningitis of mumps etiology was assessed in the presence of general cerebral (headache, vomiting) and meningeal symptoms, their duration, the presence or absence of focal neurological symptoms and pleocetosis (Table 1).

Table 1

Clinical manifestations of serous meningitis of mumps etiology

№	Clinical signs	Light form	Moderate form	Severe form
1.	Headache	Weakly expressed (+)	Moderately expressed (++)	Sharply expressed (+++)
2.	Vomit	Weakly expressed (+)	Moderately expressed (++)	Sharply expressed (+++)
3.	Photophobia	Weakly expressed (+)	Moderately expressed (++)	Sharply expressed (+++)
4.	Dizziness	Weakly expressed (+)	Moderately expressed (++)	Sharply expressed (+++)
5.	Hepaesthesia	Weakly expressed (+)	Moderately expressed (++)	Sharply expressed (+++)
6.	Duration of cerebral symptoms (in days)	7 days	10 days	More than 10 days
7.	Meningeal symptoms	Weakly expressed (+)	Moderately expressed (++)	Sharply expressed (+++)
8.	Duration of meningeal symptoms (in days)	3-5 days	5-7 days	More than 7 days

At discharge, 29% of patients still had the following complaints: irritability, sleep disturbances, weakness, low appetite, migraine headaches. These signs are mainly observed in asthenoneurotic syndrome. It is known from the literature that after mumps meningitis, asthenoneurotic, diencephalic and hypertensive syndromes often occur for a long time.

During a 3-year follow-up observation of patients, it was found that only 10 (32.3%) patients remained healthy from the moment of discharge from the hospital and during 3 years of observation, and in 67.7% various functional and organic disorders of the central nervous system were detected. So, according to According to our observations, the frequency of asthenoneurotic syndrome was 35.5%, hypertension 12.9%, migraine 9.7%, decreased concentration 3.2%, focal damage to the central nervous system 6.5%.

Conclusion

In adults, serous meningitis of mumps etiology is severe and leaves serious complications. It has been established that the outcomes of serous meningitis of mumps etiology are determined by the timing of convalescence. In the first 3 months, asthenoneurotic, diencephalic and hypertensive syndromes prevail, while from 6 months to 3 years focal symptoms lead to the need for clinical observation for at least 3 years and further rehabilitation. Considering the complications and adverse

consequences in the outcome of mumps infection in those who have recovered from the disease, it is necessary to target young people (15-20 years) to immunization against this infection.

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