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THE METHOD OF DETERMINING THE VISCOSITY OF SALIVA IN CHILDREN WITH A COMMON HEART DEFECT AND CYTOLOGICAL STUDIES

Hamroyeva D.Sh.

Bukhara State Medical Institute named after Abu Ali ibn Sino, Uzbekistan

✓ ***Resume***

One of the most frequent complications of diseases of the cardiovascular system is the development of a general syndrome of heart failure. In developed countries, widespread heart failure is one of the main causes of disability and death in the working population. The most common causes of general heart failure: ischemic heart disease (50-70%), arterial hypertension (12-17%), alcohol abuse (7-9%), diabetes mellitus (10%), cardiomyopathy (3.4%). The results of numerous studies confirm the direct involvement of systemic and local inflammation in the initiation and development of atherosclerosis and its complications. In this regard, infectious diseases of the oral cavity are considered as a risk factor for the development of cardiovascular diseases.

Keywords: general heart disease, salivation, treatment-prevention, salivation, cytological examination.

СПОСОБ ОПРЕДЕЛЕНИЯ ВЯЗКОСТИ СЛЮНЫ У ДЕТЕЙ С РАСПРОСТРАНЕННЫМ ПОРОКОМ СЕРДЦА И ЦИТОЛОГИЧЕСКИЕ ИССЛЕДОВАНИЯ

Хамроева Д.Ш.

Бухарский государственный медицинский институт имени Абу Али ибн Сино, Узбекистан

✓ ***Резюме***

Одним из наиболее частых осложнений заболеваний сердечно-сосудистой системы является развитие общего синдрома сердечной недостаточности. В развитых странах распространенная сердечная недостаточность является одной из основных причин инвалидности и смертности трудоспособного населения. Наиболее частые причины общей сердечной недостаточности: ишемическая болезнь сердца (50-70%), артериальная гипертензия (12-17%), злоупотребление алкоголем (7-9%), сахарный диабет (10%), кардиомиопатия (3,4%). Результаты многочисленных исследований подтверждают прямое участие системного и местного воспаления в инициации и развитии атеросклероза и его осложнений. В связи с этим инфекционные заболевания полости рта рассматриваются как фактор риска развития сердечно-сосудистых заболеваний.

Ключевые слова: общий порок сердца, слюнотечение, лечение-профилактика, слюноотделение, цитологическое исследование.

УМУМИЙ ЮРАК НУҚСОНИГА ЭГА БОЛАЛАРДА СЎЛАК ҚОВУШҚОҚЛИГИНИ АНИҚЛАШ УСУЛИ ВА ЦИТОЛОГИК ТАДҚИҚОТЛАР

Ҳамроева Д.Ш.

Абу Али ибн Сино номидаги Бухоро давлат тиббиёт институти, Ўзбекистон

✓ ***Резюме***

Юрак-қон томир тизими касалликларининг энг кенг тарқалган асоратларидан бири умумий юрак нуқсони синдромининг ривожланишидир. Ривожланган мамлакатларда умумий юрак нуқсони ногиронлик ва меҳнатга лаёқатли аҳоли ўлимининг асосий сабабларидан биридир. Умумий юрак нуқсонининг энг кўп учрайдиган сабаблари: юрак ишемик касаллиги (50-70%), артериал гипертензия (1217%), спиртли ичимликларни истеъмол қилиш (7-9%), диабетес меллитус (10%), кардиомиопатия (3,4%). Кўплаб тадқиқотлар натижалари атеросклероз ва унинг асоратларининг бошланиши ва ривожланишида тизимли ва маҳаллий яллиғланишнинг бевосита иштирок этишини тасдиқлайди. Шу муносабат билан оғиз бўшлиғининг юқумли касалликлари юрак-қон томир касалликларининг ривожланиши учун хавф омили сифатида қаралади.

Калит сўзлар: умумий юрак нуқсони, сўлак ажралиш, даволаш-профилактика, сўлак, цитологик текширув.

Relevance

The purpose of the study: To increase the efficiency of diagnosis, prevention and treatment of dental diseases, it is to improve the development of oral cavity diseases and caries prevention in children with common heart defects.

Object of research: Children's multidisciplinary medical center 2-11 years.

Research materials: Oral fluid, blood, blood serum, smear from the mucous membrane of the oral cavity, official medical documents to study the extent of the disease.

Research methods:

1. Dental (visual, instrumental, instrumental dental examination).
2. Immunological, microbiological, morphological, statistical methods are used.

Scientific novelty of the research:

It is based on the correlation between clinical functional, biochemical and cytological indicators in the body and clinical symptoms of the main dental diseases in the oral cavity in children with common heart disease;

In children diagnosed with a common heart defect, biophysical changes in oral fluid parameters, level of hygiene in the oral cavity, and inflammatory reaction in the periodontal soft tissues were found to be the main risk factors for the development of dental caries;

Conclusions on the appropriateness of the study:

In order to carry out cytological studies in children with a common heart defect, traces were taken from the mucous membrane of the gums in the area of frontal and chewing teeth (6 traces from each student). For this, a dry, degreased, sterile object bottle is placed several times on the studied part. If it is difficult to put on the damaged part, a stationery eraser can be used. The eraser is cut into long thin sticks (working area 3x3 mm), sterilized, dried, placed on the studied part, and then the object is transferred to the glass. 5-10 marks are made on each object bottle. The drug is left in methyl alcohol for 15-20 minutes, it is taken under a microscope using a x400 objective, as well as a x100 immersion objective.

Only cells of the late stage of differentiation are detected in traces of healthy mucosa. The use of the cell differentiation index to evaluate the cytograms of traces when the mucous membrane of the gums is damaged showed the clarity and convenience of this indicator for practical observation in the dynamics of the disease. Certain conclusions can be drawn about the nature of the microflora on trace drugs. In the absence of pathological changes in the soft tissues of the periodontium, the cytological picture taken from the examination of the gum traces was characterized by multi-functional changes in which the gingival transudate or exudate accumulated in the case of periodontitis.

Salivation rate in children with common heart defects

A graduated test tube and a stopwatch are needed for research in children with common heart defects. The patient is asked to bend the head down, open the mouth slightly and not to swallow, and it is allowed to flow freely into a test tube placed on the lower lip. The start and end time for saliva collection is set (usually 515 minutes). Salivation rate is calculated according to the following formula:

$$Cc = \frac{V}{t}$$

Here: Ss is the rate of salivation; V – volume of secreted saliva (in ml); t – saliva collection time (in minutes). The normal rate of unstimulated salivation is Ss = 0.31-0.6 ml/min, hyposecretion is diagnosed at Ss = 0.03-0.3 ml/min, and hypersecretion is diagnosed at Ss = 0.61-2.40 ml/min.

A method for determining salivary viscosity in children with common heart defects

A 1.0 mL micropipette and a stopwatch are required to determine viscosity. Before starting the saliva study, the micropipette is filled with water: - water is drawn up to the 1.0 ml mark in a vertically placed test tube; - the test tube is released with a finger and the water is allowed to flow out of the test tube for 5 seconds; - the level of water remaining in the test tube is determined (usually 0.08 ml). Thus, they check how much water comes out of the test tube in 5 seconds (usually 0.92 ml). To determine the viscosity of saliva, the test saliva is drawn into an empty calibrated tube, then the saliva is allowed to flow out of the tube for 5 seconds and the volume of saliva released during this time is measured. The viscosity of saliva is calculated according to the following formula:

$$\frac{Vc}{B_B} = \frac{Bc}{B_B} \quad \text{from this} \quad B_B = \frac{V_B B_B}{Vc}$$

Here: Vv is the volume of water released (ml); Vc – the volume of saliva (ml); Vs - viscosity of saliva (relative); Vv is the viscosity of water (relative). Salivary viscosity is positive when it is 1.0-4.0, and negative when it is 6.0-9.0.

Clinical determination of enamel remineralization rate in children with common heart defects determination

Determination of in children with general heart defects T.L. It was conducted according to the method of Redinova and co-authors. Clinical determination of enamel remineralization rate can be used when public measures are taken for the prevention and treatment of dental caries. It is technically simple, and its results are easy to interpret: determination of resistance to caries of teeth is carried out as follows. An acidic buffer mixture with pH 0.3-0.6 and methylene blue 2% is prepared beforehand. An acidic buffer is a demineralizing mixture. To prepare it, 97 ml of hydrochloric acid and 50 ml of salt-sour potassium are taken, mixed, and distilled water is poured to a volume of 200 ml. To give more viscosity, a part of glycerin is added to one part of the mixture.

The high viscosity of such a mixture makes it possible to obtain a drop with a constant size of contact with the tooth and a good standing on its surface. Sour fuchsin is added to the demineralizing liquid for better visual control. In this case, the demineralizing mixture is red. Acid tolerance of enamel (demineralization process) is evaluated by the staining intensity of the damaged part of tooth enamel. The degree of coloring is judged by the typographical scale of the shade of blue. We used a ten-point scale, where the least painted color stick got 10% and the darkest painted got 100%. After a day, the damaged part of the tooth enamel is painted again. At this time, the effect of the demineralizing mixture is not applied. If the damaged part of tooth enamel is stained, then this process is repeated after one day. The loss of staining property in the damaged part is considered as its complete recovery. The damaged part of the tooth enamel regenerates in different people in different periods. That is why the remineralizing properties of saliva determine how long it takes for the damaged part of the enamel to lose its ability to be painted.

Thus, in children with a common heart defect, the sensitivity of tooth enamel to acid (demineralization, or solubility of enamel) is calculated in percentages, and the remineralization ability of saliva is calculated in days. Caries-resistant people have low sensitivity of tooth enamel to acid (less than 40%) and high remineralization ability of saliva (from 1 to 3 days), and caries-prone people have high sensitivity of tooth enamel to acid (40% and higher) and low remineralization ability of saliva. (more than 3 days) typical. Based on the research, a sequential algorithm of learning methods for children with common heart defects was created, illustrated in Fig. 2. Dental methods of treatment in children with a common heart defect consisted of the following stages:

I. Treatment-prophylactic measures carried out according to the established algorithm in children with general heart defects:

1. Determining the level of individual oral hygiene in children with general heart defects and forming correct knowledge and skills on oral care.
2. Conducting lessons on individual oral hygiene in children with common heart defects.
3. Carrying out individual and professional hygiene of the oral cavity in the necessary volume.

II. Treatment in children with common heart defects:

1. The oral cavity of children with general heart defects is sanitized as needed;
2. Treatment of pathogenetic changes in the oral cavity in children with common heart defects.
3. Deep fluoridation of teeth of children with general heart defects.
4. Oral remineralization therapy of children with common heart defects.

Description of treatment-prophylactic measures in the oral cavity in children with common heart defects

The course of treatment-prophylactic measures in the oral cavity in children with general heart defects was conducted after determining the level of knowledge and skills about oral hygiene in children and its impact on the development of the main dental diseases. At the first visit to the cardiologist-dentist, the knowledge and skills of the children and their parents regarding the hygienic care of the oral cavity were determined. Tools and methods used by students and their parents in individual oral hygiene were determined. In children with a common heart defect, according to stomatologists, electric toothbrushes are more effective than ordinary brushes in that the working part rotates and oscillates at the same time - this allows cleaning 27% more from tooth decay and reducing gum pain by 12%. An electric toothbrush has bristles vibrating with the help of an electronic motor. Usually, this motor is built inside the body of the brush and is powered by an accumulator or battery.

The bristles vibrate up and down, or reciprocating. It is known that children do not like, do not know how to brush their teeth, or do it incorrectly. After all, dental diseases are very dangerous because the body is less resistant to infections in childhood. Most often, the cause of oral diseases in children is their unsatisfactory hygiene, and one of the most popular toothbrushes is Frozen - brushes specially designed for use by children from 3 years old, and they clean children's teeth completely safely. Frozen electronic toothbrushes for children have a colorful design and make the process of cleaning teeth interesting, while cleaning not only the chewing surface of the teeth, but also the areas between the teeth and the front of the neck, removing the accumulated stains and food residues by making a rotating movement, the brush the head part makes the process a game and cleans the tooth from all sides, while they are absolutely safe for the gums, as they are specially designed for the sensitive soft tissues of children. The high sound speed ensures the formation of a homogeneous foam from saliva and oxygen paste, which allows you to effectively and carefully clean the teeth from all sides, including complex areas. Due to the creation of the irrigation effect, the teeth are cleaned gently, without using force, without damaging the enamel of the teeth. At the same time, the bristles, which perform micro-movements at the speed of sound, thoroughly massage the gums, thereby increasing blood microcirculation and preventing gum diseases. The bristles of most brushes are made of modern high-quality hypoallergenic synthetic nylon material. The unique shape of the devices allows you to choose the one suitable for differentiated care: daily cleaning, cleaning of complex areas, with a whitening and strengthening effect. In children with common heart defects, it was recommended to practice oral hygiene in the standard method of cleaning teeth using ETCh in children who are prone to developing diseases in the oral cavity.

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