



## A Literary Review of Statistical Indicators in the Diagnosis of Oral Tuberculosis

**Muratova Saodat Kadirovna**

Samarkand State Medical University, Samarkand, Uzbekistan

**Shukurova Nodira Tillayevna**

Samarkand State Medical University, Samarkand, Uzbekistan

ABSTRACT

On the basis of statistical diagnostic indicators, the spread of tuberculosis among the world's population was studied. The data obtained will help improve the early diagnosis of patients with active tuberculosis and their provision of planned dental care.

**Keywords:**

mycobacterium, epidemic, unsanitary conditions, AIDS, Pospelov phenomenon, tuberculosis, mucous membrane, hypersalivation

**Introduction:** The high prevalence of tuberculosis among the population determines the relevance of information on timely diagnosis and prevention of this pathology. Clinical manifestations of tuberculosis in the oral cavity, depending on the form, modern diagnostic methods are described. methods of prevention in tuberculosis as well as tactics of a dentist in tuberculosis of the oral cavity. Last year, WHO confirmed the status of tuberculosis as the number one infectious killer on the planet. Tuberculosis is a chronic infectious disease, the causative agent of pathology is considered to be *Mycobacterium tubercle* (also called Koch's wand, by the name of the German scientist who discovered it). According to WHO estimates, tuberculosis is one of the most dangerous infectious diseases in the world, along with AIDS and hepatitis. The fight against it has been conducted for 150 years, but the global epidemic could not be defeated. The excess of the national average incidence of tuberculosis (from 80 to 206 cases per 100 thousand population) was registered in all subjects. Men suffer from tuberculosis 3.2 times more often than women, while the rate of morbidity growth in men is 2.5 times higher than women. The

most affected are persons aged 20-29 and 30-39 years. At the same time, there is an increase in the incidence of tuberculosis associated with HIV infection among the permanent population (2009 - 4.4; 2011 - 5.6; 2012 - 5.9 per 100 thousand population) [9, 10].

Tuberculosis is the second leading cause of death from any one infectious agent, second only to HIV/AIDS. In 2013, 9 million people contracted tuberculosis and 1.5 million people died from this disease. The epidemiological situation of tuberculosis in penitentiary institutions remains a problem. Today, 35 thousand tuberculosis patients are kept in institutions. Here are the statistics: in 2018, morbidity rates in Uzbekistan amounted to 42.6 people per 100 thousand population, and mortality - 1.6 people. For comparison: in 2002, these data were 79.1 and 12.3, respectively. That is, the situation has improved today. Tuberculosis is a chronic infectious disease, the causative agent of which is *Mycobacterium tuberculosis* (Koch's bacillus). *Mycobacterium tuberculosis*-outside of a living organism, they remain viable for many months, especially in damp and dark rooms. Currently, there are 4 main types of tuberculosis that can cause

diseases of humans and warm-blooded animals - human, bovine, avian and mouse. A person is susceptible mainly to the first two types of Mycobacterium tuberculosis. Infection with tuberculosis can be caused by Mycobacterium tuberculosis, secreted not only with the sputum of the patient, but also with pus, urine, feces. In some cases, infection can also occur from animals with tuberculosis, primarily from cattle. Possible infection with tuberculosis depends on many reasons: the amount of mycobacteria secreted by the patient, the closeness and duration of contact, compliance with individual prevention measures, previous health status, the state of the body's defenses, etc. Unsanitary household habits (use of shared utensils, shared toothbrushes and other personal hygiene items) contribute to the spread of tuberculosis infection. Clinical forms of tuberculosis of the oral region:

Tuberculosis of the oral mucosa: tuberculosis of the tongue; tuberculosis of the gums; tuberculosis of the mucous membrane of the lips and cheeks;

tuberculosis of the hard and soft palate. The main clinical and morphological forms of tuberculosis of the oral mucosa are infiltrative and ulcerative. The color of the tuberculous infiltrate varies from bright red in acute forms with a predominantly exudative component of inflammation, to pale gray in the presence of fibrous layers. Tuberculous ulcers have the appearance of small cracks, sometimes hiding in the folds of the oral mucosa, or extensive ulceration, accompanied by edema with a rash of miliary (small focal) nodules of grayish-yellow color. The pain symptom in various forms of tuberculous lesions of the oral cavity is not very pronounced, depends on the localization of the process and occurs as an independent phenomenon or when eating.

The symptoms of oral tuberculosis vary depending on the severity, nature, form and localization of the process. Clinically, they are characterized by a number of general functional disorders of the body, characteristic of tuberculosis intoxication, and local symptoms, including manifestations of pulmonary lesions and a direct picture of tuberculosis of the oral mucosa. In the acute stage, it is possible to

attach nonspecific inflammation caused by fungi of the genus *Candida*, as well as complications of tuberculous lupus include erysipelas. Infrequently, in 1-10% of cases, there are ulcers that degenerate into lupus carcinomas. The most frequent localization of tuberculous lupus in the oral cavity is the upper lip, gum and alveolar process of the upper jaw in the area of the frontal teeth, hard and soft palate. The primary element of the lesion is a specific tuberculous tubercle (lupoma), soft, red or yellow-red in color, with a diameter of 1-3 mm. The tubercles are arranged in groups. They grow along the periphery of the focus, and in the center of it they are easily destroyed, leading to the appearance of ulcers with soft, slightly painful edematous edges. The entire lesion has the appearance of a superficial ulcer, covered with bright red or yellow-red clean or with a yellowish coating of easily bleeding papillomatous growths resembling raspberries. The bone tissue of the interdental septa is destroyed, the teeth become mobile and fall out. The affected lip swells strongly, increases in size, is covered with copious bloody-purulent crusts, after removal of which ulcers are exposed. Painful cracks appear on the lips.

Characteristic of tuberculous lupus is the symptom of apple jelly and a sample with a probe. When pressed with a slide on the skin or the red border of the lips, the affected tissue turns pale, lupomas in the form of yellowish-brown nodules similar in color to apple jelly become visible (a symptom of apple jelly). When pressed, the button probe easily falls into the lupoma (probe test, Pospelov phenomenon). The general condition of patients changes dramatically: emaciation, excessive sweating, shortness of breath, increased body temperature, hypersalivation are observed. Regional lymph nodes are enlarged and thickened. Pirke's reaction is positive in most cases. In ulcers, Koch's bacilli are found very rarely, even with repeated studies. In patients with a long-term lupus process, smooth shiny scars develop at the site of the lesion. When localized on the lip, they deform it greatly, which leads to difficulty eating, speech distortion. Without treatment, the process lasts indefinitely, fresh bumps may appear on the

scars. Malignancy of lupus ulcers when localized in the oral cavity or on the lips occurs in 1-10% of cases. On the oral mucosa, miliary ulcerative tuberculosis develops a second time as a result of out inoculation of Koch bacilli from open foci of infection, most often from the lungs with a severe progressive course of the process. Reactivity to the pathogen in such persons is reduced. Mycobacterium tuberculosis, secreted in significant quantities with sputum, are introduced into the mucous membrane at the sites of injuries, typical tuberculous tubercles develop, after the collapse of which an ulcer forms in the center of the focus. The ulcer is usually shallow, with uneven soft edges, painful. Its bottom and edges have a granular structure due to undisturbed tubercles, covered with a yellowish-gray coating. The surrounding tissues are swollen, small abscesses can sometimes be found around the ulcer – the so-called Trill grains. With the long-term existence of the ulcer and secondary infection, the edges and bottom of it become compacted. On the tongue or transitional fold, ulcers can take a slit-like shape when the bottom of the ulcer is wider than the entrance opening. Regional lymph nodes may not be palpable at first, then enlarged, elastically dense, painful are palpated. Collective tuberculosis, or scrofuloderma, on the oral mucosa is extremely rare, mainly in children. It is characterized by the formation of nodes in the deep layers of the mucous membrane, soldered to the skin or mucous membrane, without a pronounced inflammatory reaction. The nodes gradually increase, soften and open. Slightly painful ulcers of irregular shape with undercut edges are formed. The bottom of the ulcers is covered with sluggish granulations and a grayish-yellow coating. After the healing of ulcers, retracted, disfiguring scars are formed. Unfortunately, patients suffering from even severe forms of pulmonary tuberculosis sometimes do not know about their disease. The appearance of ulcers on the mucous membrane of the oral cavity leads them to the dentist. In such cases, the main task of the dentist is to make or assume the correct diagnosis and immediately refer the patient for examination and treatment to a phthisiologist. Inflammatory changes detected during

examination of the oral cavity differentiate from ulcerative-necrotic stomatitis of Vincent, traumatic, trophic and cancerous ulcers. Tuberculous lupus is differentiated from tubercles that occur in tertiary syphilis. Syphilitic tubercles are larger, differ in greater density. The edges of ulcers with syphilis are smooth, dense, and with tuberculous lupus – soft, pitted. Unlike lupus, syphilitic rashes do not occur repeatedly on the scars. There is no symptom of a failing probe and apple jelly in syphilis. Changes in the type of scrofuloderma on the oral mucosa differentiate from syphilitic gum or actinomycosis. Most often, about 90% of cases, there is a release of M. tuberculosis. M. bovis is detected less often, only in 10-15% of cases. The allocation of MBT of the bovine type is observed in rural residents with an alimentary pathway of infection. A diagnostic biopsy of the ulcer edge is performed for histological and bacteriological examination. In the study of mucosal biopsies, the detection of Pirogov–Langhans cells is necessary to confirm the tuberculosis etiology. Polymerase chain reaction (PCR) is also used to detect MBT DNA. The results of cytological and bacterioscopic studies are decisive in the diagnosis. Diagnosis of tuberculosis: General blood test: nonspecific changes are characteristic: a decrease in hemoglobin (anemia) and leukocytes (leukopenia). Microbiological diagnostics: detection of mycobacterium tuberculosis in sputum (carried out three times); examination of bronchial flushing waters; examination of pleural fluid; bronchoscopy with biopsy of bronchial tissue; biopsy of pleura, lung. Genetic methods: The most common and informative method is the PCR polymerase chain reaction method. It is based on the detection of fragments of genetic material (DNA) of bacteria in the studied material.

Radiological methods: fluorography, radiography, fluoroscopy, tomography. In children, the main diagnosis for suspected tuberculosis is periodic tuberculin tests. Tuberculosis lesion of the oral mucosa is a manifestation of a common tuberculosis infection, therefore, general treatment of patients is carried out in specialized tuberculosis dispensaries. Dental care is

provided to patients with tuberculosis of the respiratory system in strict compliance with the measures of the sanitary and anti-epidemic regime. Examination of the oral cavity in patients with an active form of tuberculosis and the provision of planned dental care to them is carried out in the direction of a phthisiologist after the main course of etiotropic therapy. Planned care is provided no earlier than 2-4 months from the start of treatment, after the cessation of the release of M. tuberculosis with sputum.

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