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# POLYFOCAL CLINICAL MANIFESTATIONS IN PATIENTS WITH CHRONIC BRUCELLOSIS

Yakubova Nigina Sadriddinovna
Sayfiyeva Shakhrizade Hasan kizi
Samarkand State Medical Institute

**Abstract**
Based on the data of the Samarkand city IDCH, a comparative analysis of clinical and laboratory data and serological research results was conducted in 225 patients with the most severe course of brucellosis with polyfocal lesions in the sub- and decompensated stages. . The syndromes common in patients with primary chronic brucellosis and secondary chronic brucellosis and their symptoms are analyzed.

**Keywords**: Chronic brucellosis, polyfocal manifestations, disability.

## Introduction

Brucellosis is a highly dangerous infectious disease belonging to the group of zoonoses, the tendency of the pathogen to a long-term chronic course, a high risk of disability, which determines the social significance of this infection [1,2,6] . Damage to organs and systems largely determines the course and outcome of brucellosis. According to the RCGSEN, the territory of the Republic of Uzbekistan differs from each other in the prevalence of brucellosis. There are regions (Bukhara, Navoi, Samarkand, Kashkadarya, Jizzakh and Syrdarya) with a disease rate 2-3 times higher than the average for the republic . In this regard, a retrospective analysis of the medical history of patients with brucellosis admitted to the Samarkand city regional clinical infectious diseases hospital was carried out. Various combinations of lesions of the musculoskeletal, nervous, cardiovascular systems, genitals against the background of fever, lymphadenopathy, hepato- and splenomegaly [3,5,8] are characteristic signs of chronic brucellosis. Given that chronic brucellosis is characterized by a large polymorphism of clinical manifestations and can be “masked” as various infectious and somatic diseases, it is necessary to know the possibilities of diagnosing brucellosis in people living in endemic areas [9,10, 12]. According to the figurative expression of ND. Beklemisheva: “The course of the disease is very diverse, there are a lot of different symptoms and often manifest themselves in such strange combinations …” [2,18]. Thus, a variety of clinical manifestations, often erased, seronegative variants of the course create certain difficulties in diagnosing, interpreting the state of the infectious process. Therefore, the diagnosis of chronic brucellosis is sometimes made many years after infection.

**Research objective:** To assess polyfocal manifestations in patients with chronic forms of brucellosis in the Samarkand region.



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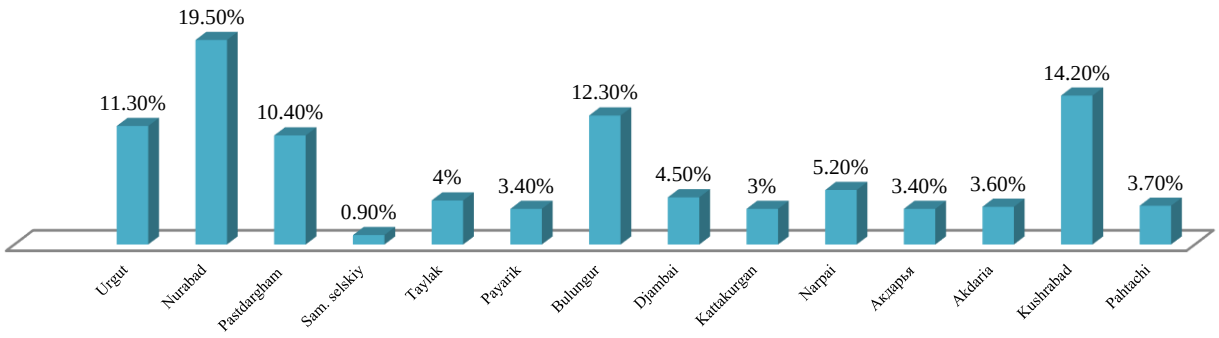
**Materials for the study:** research material: medical history of patients who have applied to the Samarkand Regional Clinical Infectious Diseases Hospital over the past 10 years.

An analysis of **brucellosis incidence was conducted from 2008 to 2018** .

Since Brucella is excreted by sick animals through all excretory systems, the ways of spreading brucellosis are diverse. Infection of humans occurs by contact, food and, less often, aerogenic routes, combined routes of transmission are possible.

According to Order No. 37 of the Republic of Uzbekistan, the diagnosis of "Brucellosis" was confirmed serologically in 86.6% of cases, and bacteriologically in 57.3%.

The disease is more common in the population In areas where livestock breeding is practiced - Nurabad district (19.5%), Qushrababad (14.2%), Bulungur (12.3%), Urgut (11.3%), Pastdargam (10.4%). , Narpay (5.2%), Jomboy (4.5%). In other districts of the region, the incidence rate is 4 % of the total number of patients who applied not exceeded




**Shape 1. Distribution of patients by region.**

At the same time, the peak of patient registration is observed in the spring months , which is associated with the greatest contact of the population with animals during these periods of the year (calving, birthing, etc.).

over the next 10 years, the ability of patients to apply has increased sharply from 5.5% (2008) to 13.8% (2018). Thus, in 2008, 5.5% of patients were identified, in 2009 - 6.9%, in 2010 - 6.6%, in 2011 - 6.9%, in 2012 - 7.8%, in 2013 -8.9%, in 2014 - 9.8%, in 2015 - 12.05% of patients. %, in 2016 -11.1%, in 2017 -11.9%, in 2018 -13.8%.

Medical in the literature there are clinical classifications of brucellosis proposed by NI . Ragosa (1941, 1952), AF Bilibin (1947 ), GP Rudnev (1955), ND Beklemishev (1957), NN Ostrovsky (1987), K. Jalilov (1987), VI Pokrovsky (2004). In the Republic of Uzbekistan, the classification of NI is most often used for diagnosis. Ragosa, supplemented by VM. Majidov or Q. Jalilov classification. All these classifications are well described in manuals and textbooks on infectious diseases. At the same time, foreign authors from countries endemic for brucellosis, as well as WHO and CDC, use a simplified classification, according to which brucellosis is divided only by



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the duration of the course into asymptomatic, acute, protracted and chronic forms ( PapasG , 2005). However, for a more detailed description of the clinic, we turned to the classification according to Rudnev GP. (1955).

In patients with chronic brucellosis, organ damage was noted with varying frequency, so changes in the cardiovascular system occurred in 24% of cases; musculoskeletal system in 60.2%, nervous system in 13.2%, genitourinary system in 3.6%. In some cases, combined lesions of organs and systems were noted.

Among the patients we examined, concomitant diseases such as arterial hypertension (32.8%) were identified, of which IArt. (15.2%), I I Art. (12.4%), IIIst (5.2%); pyelonephritis (7.5%), anemia (47.4%), atherosclerosis (4.1 % ) , coronary artery disease ( 8.2 %).

All patients A comprehensive clinical and laboratory examination was performed using bacteriological and serological diagnostic methods. Serodiagnosis to detect antibodies to Brucella antigens was performed using the following methods: Wright and Huddleson reactions.

In a general blood test, 57.8% of patients showed mainly lymphocytosis and a change in ESR up to 60 mm / s. Biochemical indicators were characterized by an increase in the level of the liver enzyme alanine aminotransferase in the blood (up to 1.5 norms) in 11.5% of cases; C-reactive protein concentration - in 27.0%; rheumatoid factor - in 7.7% of patients. The clinical and epidemiological diagnosis was confirmed by the results of a positive Heddelson agglutination test in 47.7% of patients, and by a positive Wright agglutination test with a titer from 1/200 to 1/800 in 86.6%. 57.3% of patients had positive results of bacteriological blood culture.

From functional methods, all patients underwent electrocardiography (ECG), echocardiography (EchoCG). Our analysis of the results of electrocardiographic examinations of patients with brucellosis showed that 24.0% of patients had changes of a different nature on the ECG. The frequency and severity of the ECG to a certain extent depend on the severity of brucellosis infection.

Thus, in most patients with chronic brucellosis, ECG changes were detected as heart rhythm disturbances (sinus tachycardia, sinus bradycardia and sinus arrhythmia), which were usually transient, and normalization of the rhythm was observed two days after the start of adequate etiotropic and anti-inflammatory therapy. therapy. In patients with brucellosis, disturbances in repolarization processes in the form of diffuse changes in the myocardium occurred even with a short duration of the disease and were pronounced and persistent (Table 1).

**Table 1 ECG changes in chronic brucellosis**

| Electrocardiogram readings | | abs | % |
|---|---|---|---|
| Rhythm disorders | sinus arrhythmia | 17 | 8.4 |
| | Sinus tachycardia | 128 | 63.3 |
| | Sinus bradycardia | 57 | 2.8 |
| Agitation disorder | Single ventricular extrasystoles | 35 | 17.3 |
| Conductivity disorder | AV block I degree | 23 | 11.4 |
| | Incomplete blockade of PNPG | 4 | 1.9 |
| | Complete blockade of PNPG | 2 | 0.9 |
| | Incomplete blockade of the LNPH | 6 | 2.9 |
| Repolarization disorders | repolarization syndrome | 3 | 1.5 |
| | Diffuse changes in the myocardium | 22 | 1.4 |
| | Left ventricular hypertrophy | 136 | 67.3 |



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Taking into account the complaints of patients, the clinical manifestations of nervous system damage in brucellosis vary significantly from 2% to 95% and can be expressed by the following syndromes: CNS damage (meningitis, encephalitis), PNS (neuritis, sciatica), ANS. (vegetative-vascular dystonia) and psychobrucellosis (asthenoneurotic syndrome, depressive syndrome, hallucinosis, etc.) (Table 2).

**Table 2 Main clinical manifestations in patients with neurobrucellosis**

| No. | clinical sign | Abs. | % |
|---|---|---|---|
| 1 | Meningitis | 2 | 3.7% |
| **2** | Encephalitis | 1 | 1.8% |
| **3** | Radiculitis | 41 | 75.9% |
| 4 | Polyradiculitis | eleven | 20.3% |
| 5 | Neuritis of the facial nerve | 23 | 42.5% |
| **6** | Neuritisvestibulocochlear nerve | 19 | 35% |
| 7 | Optic neuritis | 7 | 12.9% |
| 8 | Autonomic nervous system disorder | 51 | 94.4% |
| 9 | Functional disorders of the nervous system | 28 | 51.8% |
| 10 | Psychoses | 6 | 11.1% |

3.7% of patients had meningitis of brucellosis etiology. Clinically, brucellosis meningitis was manifested by neck stiffness, Kernig and Brudzinski signs, pain points on the face, head and neck, mainly along the veins, sometimes cranial nerves were affected. Examination of the cerebrospinal fluid revealed: pleocytosis, increased protein, xanthochromia, the content of sugar and chlorides is often reduced, the content of potassium, calcium and inorganic phosphorus is increased.

Early and late forms of brucellosisencephalitis are characterized by the obligatory involvement of the meninges, as well as damage to the cranial nerves. With this form of the disease, the auditory, facial and optic nerves are most often affected, and the literature also describes combined lesions of the oculomotor, abducens, trigeminal, vagus and hypoglossal nerves. All forms of brucellosis of the central nervous system are accompanied by a variety of clinical manifestations, which confirms the presence of a diffuse pathological process. Meningoencephalitis was clinically manifested by paresis of the extremities of a spastic type and impaired sensitivity of a conductive nature. Meningoencephalitis was detected in 1.8% of patients.

The clinical picture of brucellosis sciatica was detected in 75.9% of patients and was manifested by acute and poorly localized pain in the lumbosacral region lasting several hours, days or weeks. Basically, the pain begins gradually, gradually increases and reaches a peak. Often it is called vegetative-allergic syndrome with pain points. This syndrome is characterized by acute sensory disturbances and diffuse pain, which have high intensity, but do not correspond to a clear localization. The patient tries to feel the painful area himself, but he does not achieve good success, and therefore patients declare that "the whole limb hurts." The variability of pain is also characteristic.

Polyradiculitis was observed in 20.3% of patients, was not always symmetrical and did not always involve all limbs. Polyradiculitis was preceded by a rich vegetative symptomatology: cyanosis,



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coldness, severe sweating of the distal parts of the hands and feet, sometimes edema, arthropathy, which can be combined with pain in the spine, joints of the extremities, etc.

In all examined patients, the clinical signs of facial nerve neuritis are characterized by flattening of the nasolabial fold on the side of the inflamed nerve, drooping of the eyelid and corner of the mouth, a slight burning sensation, tingling, the appearance of facial muscles. weakness, taste disturbance, increased salivation. This symptom occurs in 42.5 % of patients .

Vestibulocochlear neuritis is most often found in patients with neurobrucellosis (35%) and is characterized by hearing loss, usually bilateral. Hearing loss was often the only clinical manifestation of chronic brucellosis after acute brucellosis. According to various literature, some patients with chronic brucellosis had hearing loss. And this suggests that vestibulocochlear neuritis is one of the important diagnostic signs of chronic brucellosis.

In general, optic nerve damage is manifested by loss of vision (partial or complete) or sudden onset of blurred or "hazy" vision, in addition, patients experience pain in the affected eye. In addition to these complaints, patients with optic neuritis may have partial loss of color vision in the affected eye (colors appear washed out compared to the other eye). Often only one eye is affected, and patients may not be aware of the loss of color vision until a doctor examines them. According to the results of literature data describing optic neuritis of brucellosis etiology, it has been proven that 92% of patients experience pain in the eye of a different nature, which occurs before the loss of vision in the affected eye in 39.5%.

Optic neuritis most often affects young people between the ages of 18 and 45, with an average age of 30-35, predominantly women, and is reported in 12.9% of patients.

**Autonomic nervous system disorders** were observed in almost all patients with brucellosis (94.4%) and were characterized by severe sweating or dry skin, itching, atrophy, acrocyanosis, hair loss, brittle nails, decreased blood pressure, weight loss, emaciation, osteoporosis, muscle fibrosis, and decreased elasticity.

Functional disorders of the nervous system are often observed in brucellosis and were detected in 51.8% of patients. Functional disorders of the nervous system occurred mainly in the early stages of the disease and proceeded in the form of emotional instability, irritability, disorientation, anorexia, insomnia with headaches, asthenia, lethargy, memory loss, apathy.

Psychosis in brucellosis has been described by many researchers. Mental disorders can occur at different stages of the disease. In this group of patients studied, psychosis manifested itself in the form of visual and auditory hallucinations, delirium, euphoria, psychomotor agitation and was detected in 11.1% of patients.

In chronic brucellosis, lesions of the urogenital tract were noted in 3.6%. At the same time, chronic prostatitis, orchitis and epididymitis were most often diagnosed in men, in women - oophoritis, salpingitis, endometritis, menstrual disorders, pregnancy and infertility. In 2 (8.1%) patients, orchitis was severe, accompanied by fever, pain and discomfort in the scrotum, testicles and their enlargement. The lesion is usually unilateral, but responds well to adequate therapy. In women with primary chronic brucellosis, menstrual cycle disorders were observed in 18 patients, in 5 patients with secondary chronic brucellosis. Among the examined women, abortion and secondary infertility were observed, salpingoophoritis was more common in 16 cases with primary chronic brucellosis and in 4 cases with secondary chronic brucellosis. brucellosis.



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**Discussion:**

Thus, the clinical manifestations of chronic brucellosis were diverse. It should be noted that each patient had three focal lesions. The cause of diagnostic errors is an insufficient assessment of the symptom complex of clinical manifestations of brucellosis depending on the form of the disease. In some cases, the epidemiological history is not taken into account, which greatly contributes to the timely diagnosis. Special laboratory research methods are not used sufficiently. Often, diagnostic errors are the result of insufficient familiarity of doctors with the features of the modern brucellosis clinic, their weak vigilance towards this infection, as well as an unqualified assessment of laboratory data without taking into account their correlation. clinical form. When diagnosing modern brucellosis, it is necessary to take into account the significant superiority of chronic forms compared to acute septic, therefore, in differential diagnosis, lesions of the peripheral and central nervous system, joints, and various chronic diseases come first. all are taken into account.

**Conclusion:**

1. Brucellosis is more common in areas where the population is more engaged in livestock breeding. Analysis of the age structure of patients showed that the main group of affected people is working age ( 25-40 years - 43.5%).
2. In the analysis of functional changes in the cardiovascular system, cardialgia, leftward expansion of the heart borders, systolic murmur, hypotension, and tachycardia were noted.
3. In patients with chronic brucellosis, ECG changes in the form of heart rhythm disturbances (sinus tachycardia, sinus bradycardia and sinus arrhythmia) were detected, which were usually transient, and normalization of the rhythm was observed two days after the start of adequate etiotropic and antiseptic treatment. - inflammatory therapy.
4. Nervous system damage can manifest itself at different stages of the disease and be the first clinical manifestation of brucellosis. The clinical picture of brucellosis is characterized by polymorphism of symptoms and a relapsing course. Most often, people associated with livestock farming, as well as those who consume unpasteurized milk, fall ill, therefore, caution should be exercised in patients with neurological manifestations living in or coming from an endemic area of brucellosis, in order not to miss the diagnosis: neurobrucellosis . Given the variety of clinical forms, some mechanisms of manifestation of neurobrucellosis, when drawing up a treatment plan for a patient, it is necessary to take into account the form of the disease, the stage of the process, the generality and nature of focal lesions. , the presence of concomitant pathology, allergic history, the patient's age - that is, therapy should be strictly differentiated, which will improve the patient's quality of life.

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