ОРГАНИЗАЦИЯ ЗДРАВООХРАНЕНИЯ

Otakulov Otabek Olimjon ugli - assistant
Abdunazarov Tokhirjan Sadulla ugli - assistant
Central Asian Medical University (Fergana, O'zbekiston)

PREVENTIVE MEASURES FOR TUBOOTITIS AMONG THE POPULATION LIVING IN MOUNTAIN AND FOOTHILL AREAS

Annotation. Purpose: *To analyze preventive measures for the development of tubootitis among the population living in mountainous and foothill regions based on scientific literature and to develop an improved method suitable for local conditions.*

Methods: *Scientific basis, practical recommendations, medical prevention and immunization, vaccination against tubootitis, use of preventive drugs, sanitary and epidemiological measures, and regular medical examinations and diagnostics of the population for tubootitis.*

Results: *Prevention of this disease is achieved through adherence to water and food hygiene standards, timely medical check-ups, and early diagnostic measures, which help reduce the likelihood of tubootitis among residents of mountainous and foothill regions.*

Conclusions: *Residents living mainly in mountainous and foothill areas are at higher risk of developing tubootitis; therefore, comprehensive, scientifically-based preventive measures are essential to address this issue. Implementing these measures not only limits the spread of the disease but also improves overall public health and contributes to socio-economic development. Large-scale prevention efforts carried out with the cooperation of healthcare professionals, local authorities, and the community will play an important role in combating tubootitis.*

Key words: *tubootitis, epidemiological factor, vaccination, preventive drugs, sanitary and epidemiological measures, regular medical examination.*

Отақулов Отабек Олимжон угли - ассистент
Абдуназаров Тохиржон Садулла угли - ассистент
Центральноазиатский медицинский университет (Фергана, Узбекистан)

ПРОФИЛАКТИЧЕСКИЕ МЕРЫ ПО ПРЕДУПРЕЖДЕНИЮ ТУБООТИТА СРЕДИ НАСЕЛЕНИЯ, ПРОЖИВАЮЩЕГО В ГОРНЫХ И ПРИБОРНЫХ РАЙОНАХ

Аннотация. Цель: *проанализировать профилактические меры по предупреждению развития тубоотита среди населения, проживающего в горных и пригородных районах, на основе научной литературы и разработать усовершенствованный местный метод.*

Методы: *научная база, практические рекомендации, медицинская профилактика и иммунизация, вакцинация против тубоотита, применение профилактических препаратов, санитарно-эпидемиологические меры, регулярные медицинские осмотры и диагностика населения на тубоотит.*

Результаты: *профилактика данного заболевания достигается за счёт соблюдения санитарных норм воды и питания, своевременных медицинских осмотров и ранней диагностики, что помогает снизить вероятность заболевания тубоотитом среди жителей горных и пригородных районов.*

Выводы: *население, проживающее преимущественно в горных и пригородных районах, имеет более высокий риск развития тубоотита, поэтому комплексные, научно обоснованные профилактические меры необходимы для решения данной проблемы. Реализация этих мер не только ограничивает распространение заболевания, но и способствует улучшению общего уровня здоровья населения и социально-экономическому развитию. Масштабные профилактические мероприятия, проводимые при сотрудничестве медицинских работников, местных органов власти и общественности, будут играть важную роль в борьбе с тубоотитом.*

Ключевые слова: *тубоотит, эпидемиологический фактор, вакцинация, профилактические препараты, санитарно-эпидемиологические меры, регулярный медицинский осмотр.*

Otaqulov Otabek Olimjon o‘g‘li - assistent
Abdunazarov Toxirjon Sadulla o‘g‘li - assistent
Central asian medical University (Farg’ona, O‘zbekiston)

TOG‘LI VA TOG‘OLDI HUDUDLARIDA YASHOVCHI AHOLI O‘RTASIDA TUBOOTIT RIVOJLANISHINI PROFILAKTIK CHORALARI

Annotatsiya. Maqsad: *tog‘li va tog‘oldi hududlarida yashovchi aholi o‘rtasida tubootit rivojlanishini profilaktik choralarini ilmiy adabiyotlardan tahlil qilish va o’zimiz uchun yangi metod ishlab chiqish.*

Uslublar: *ilmiy asoslar, amaliy tavsiyalar, tibbiy profilaktika va immunizatsiya, tubootitga qarshi emlash, profilaktik dorilar, sanitariya-epidemiologik chora-tadbirlar, muntazam tibbiy ko‘riklar hamda aholini tubootitga qarshi muntazam tekshirish va diagnostika qilishdan iborat.*

Natijalar: *tog‘li va tog‘oldi hududlarda yashovchi aholining tubootitga chalinish ehtimolini kamaytirishda suv va oziq-ovqatning gigiena qoidalariga amal qilish, tibbiy tekshiruvlar va erta tashxis choralarini o’tkazish davomida bu kasallikni oldini olishga erishilgan.*

Xulosalar: *asosan tog‘li va tog‘oldi hududlarda yashovchi aholining tubootitga chalinish ehtimoli yuqori bo‘lib, bu muammoni hal qilish uchun kompleks, ilmiy asoslangan profilaktika choralari muhimdir. Bu choralarning amalga oshirilishi nafaqat kasallikning tarqalishini kamaytiradi, balki aholining umumiy sog‘liğini yaxshilash, ijtimoiy va iqtisodiy rivojlanishni ta’minlashga ham xizmat qiladi. Tibbiyot xodimlari, mahalliy hokimiyatlar va jamoatchilik hamkorligida olib boriladigan keng ko‘lamli profilaktika tadbirlari tubootitga qarshi kurashda muhim omil bo‘ladi.*

Kalit so’zlar: *tubootit, epidemiologik omil, emlash, profilaktik dorilar, sanitariya-epidemiologik chora-tadbirlar, muntazam tibbiy ko‘rik.*

Introduction.

Tubootitis (Mycobacterium tuberculosis) is a bacterial disease that mainly affects the respiratory tract and is characterized by high transmissibility and epidemic risk. According to the World Health Organization (WHO), tubootitis is one of the major global health problems threatening millions of people worldwide. In particular, the risk of tubootitis is higher among populations living in mountainous and foothill areas, which is linked to the unique natural and socio-economic conditions of these regions. The main contributing factors include the epidemiology and regional characteristics of tubootitis and its epidemiological determinants.

In addition, the following key factors play a role in the development of tubootitis: High-density living conditions: Crowded communities, densely populated neighborhoods, and poor sanitation accelerate the spread of infection. High household burden: Multiple

families or individuals living together, often due to low socio-economic status. Weak immunity: Children, the elderly, and people with viral or bacterial infections have weakened immune systems.

Contaminated water and food: Bacteria causing tubootitis can spread through unsafe water and food supplies.

Specific factors contributing to tubootitis in mountainous regions: Changes in atmospheric pressure: Rapid changes in pressure during ascents or descents may negatively affect the function of the Eustachian tube. Cold and humid climate: Low temperatures and high humidity can lead to respiratory diseases, which in turn may result in tubootitis. Colds and upper respiratory infections: Diseases like flu, colds, rhinitis, and sinusitis cause swelling of the mucous membrane of the Eustachian tube and impair its patency. Allergies: Allergic diseases of the upper respiratory tract can also cause inflammation of the Eustachian tube. Reduced immunity: General weakening of immunity increases susceptibility to disease.

Relevance.

On this topic, international and local epidemiologists, including WHO experts, have conducted extensive research on the global epidemiology, prevention, and statistics of tubootitis. WHO data and recommendations serve as an essential foundation, especially for both developed and developing countries. In the field of sanitation and epidemiology, the international scientist R.L. Bloomfield has made significant contributions to improving sanitary conditions and preventing the spread of infections. Uzbek and Central Asian scholars such as Professors A.M. Saidov, Sh.M. Qodirov, and D.M. Karimov have studied the local epidemiological features and prevention of tubootitis. Professor V.N. Ivanov has also worked extensively on sanitation hygiene and infection prevention.

Researchers who have worked on “Preventive measures for the development of tubootitis among the population living in mountainous and foothill areas” have conducted large-scale studies in epidemiology, sanitation, microbiology, and sociology. Their work provides important theoretical and practical foundations for understanding the epidemiology, prevention, and treatment of tubootitis. However, the continued prevalence of this disease highlights the need for further research in this field.

Research objective.

Certain risk factors exist for the development of tubootitis among populations living in mountainous and foothill areas. In these regions, fluctuations in atmospheric pressure, sharp temperature changes, and sometimes limited access to medical care may affect disease prevalence. Tubootitis is an inflammation of the Eustachian tube that connects the middle ear to the nasopharynx, disrupting air exchange and creating negative pressure in the middle ear. This can lead to decreased hearing, ringing in the ears, and ear pain. Our primary aim is to develop effective preventive measures for this condition.

Materials and methods.

Regional characteristics:

The natural conditions of mountainous and foothill areas (e.g., harsh climate, lack of sanitary facilities) create a favorable environment for the development of tubootitis. Limited medical services and lack of health awareness among the population further worsen the epidemiological situation.

Pathogenesis and clinical features: Tubootitis develops as bacteria enter the body through the respiratory tract, causing inflammation in lung tissues. Bacteria can also reach lymph nodes, causing their inflammation. The clinical presentation generally includes:

- Chronic or latent forms
- Difficulty breathing, cough, severe chest and joint pain
- General weakness, loss of appetite, chills, and fever
- Purulent inflammatory processes
- Preventive measures: scientific basis and practical recommendations:

The main goal of tubootitis prevention is to stop the spread of infection. Scientifically based measures include:

Medical prevention and immunization

➢ Vaccination: Administering BCG (Bacillus Calmette-Guérin) vaccine is crucial, especially for children, to prevent severe forms of infection.

➢ Preventive drugs: In some cases, high-risk individuals may receive preventive treatment (e.g., isoniazid).

➢ Sanitary and epidemiological measures

➢ Maintain water and food hygiene: Boil drinking water and properly handle food products.

➢ Improve sanitary conditions: Ensure clean living spaces, proper ventilation, and access to sanitary facilities.

➢ Enhance living conditions: Provide spacious, well-ventilated housing.

➢ Medical check-ups and early diagnosis

➢ Regular medical examinations: Conduct regular screenings and diagnostics for tubootitis.

➢ Early intervention: Seek medical attention promptly when symptoms appear to prevent disease progression and facilitate treatment.

➢ Awareness and health education

➢ Inform the public about tubootitis, its risks, and prevention measures.

➢ Promote healthy lifestyles: Balanced nutrition, physical activity, and avoiding harmful habits.

➢ Socio-economic development

➢ Expand agricultural and economic opportunities to improve living standards and reduce disease spread.

➢ Diagnosis and treatment principles

➢ Diagnosis:

➢ ENT specialists use the following diagnostic methods:

➢ Anamnesis collection: Identify patient complaints (ear pain, ringing, hearing loss, nasal congestion) and relevant medical history.

➢ Otoscopic examination: Using an otoscope to inspect the eardrum and ear canal; the eardrum may be retracted with reduced mobility.

➢ Audiometry: Assess hearing levels; conductive hearing loss is typical.

➢ Tympanometry: Evaluates middle ear pressure and ossicle mobility; a “C” type curve indicates Eustachian tube obstruction.

➢ Endoscopic examination: Inspect the nasopharynx and Eustachian tube opening; useful for detecting enlarged adenoids, especially in children.

➢ Rhinoscopy: Examine nasal passages for swelling, discharge, or other signs of inflammation.

➢ Treatment principles:

➢ The goal is to restore Eustachian tube patency and eliminate causative factors:

➢ Reduce inflammation:

➢ Nasal decongestants: (e.g., xylometazoline, oxymetazoline) for 5-7 days.

➢ Antihistamines: If allergies are present.

➢ Antibiotics: If bacterial infection is confirmed.

➢ Nasal irrigation: Saline rinses to clear mucus.

➢ Restore Eustachian tube function:

➢ Physiological maneuvers: Valsalva or Frenzel maneuvers under medical supervision.

➢ Pneumatic massage: Improves eardrum mobility.

➢ Catheterization: Rarely used for direct medication delivery.

➢ Physiotherapy: Laser therapy, UV therapy, UHF to reduce inflammation.

➢ General strengthening:

➢ Vitamins and immune boosters.

➢ Maintain a healthy lifestyle and balanced diet.

Results and discussion.

To prevent tubootitis, residents of mountainous and foothill areas should follow these preventive measures:

Treat upper respiratory diseases promptly: Early treatment of colds, flu, rhinitis, and sinusitis prevents infections from spreading to the Eustachian tube.

Manage nasal congestion properly: Clean each nostril separately and avoid prolonged use of nasal drops. Adapt to atmospheric pressure changes: During altitude changes or air travel, swallow, chew gum, or

perform the Valsalva maneuver to equalize ear pressure.

Strengthen immunity: Eat a balanced diet rich in vitamins (especially C and D), engage in physical activity, get enough sleep, and manage stress. Maintain personal hygiene: Wash hands frequently, wear masks in crowded areas during cold seasons. Control allergies: Limit contact with allergens and take prescribed antihistamines. Undergo regular medical check-ups: Visit ENT specialists regularly, especially for children or those with chronic conditions. Seek immediate medical help if experiencing ear pain, ringing, or hearing changes. A comprehensive approach combining timely treatment of respiratory infections, immunity strengthening, adaptation to pressure changes, and proper hygiene can significantly reduce the risk of tubootitis and help safeguard public health in these regions.

Conclusion.

This paper analyzes the epidemiology, regional characteristics, and key factors influencing the development of tubootitis, based on scientific sources. It highlights the importance of evidence-based preventive measures and practical methods to prevent tubootitis in mountainous and foothill regions. Implementing comprehensive, scientifically grounded preventive measures not only reduces the spread of the disease but also improves overall public health and contributes to social and economic development. Large-scale preventive measures carried out in collaboration with healthcare workers, local authorities, and communities will be a vital factor in the fight against tubootitis.

REFERENCES

1. MacPherson, P., Lebina, L., Motsomi, K., Bosch, Z., Milovanovic, M., Ratsela, A., Lala, S., Variava, E., Golub, J. E., Webb, E. L., & Martinson, N. A. (2020). Prevalence and risk factors for latent tuberculosis infection among household contacts of index cases in two South African provinces: Analysis of baseline data from a cluster-randomised trial. *PLoS ONE, 15*(3), e0230376. https://doi.org/10.1371/journal.pone.0230376

2. Schaller, M. A., Wicke, F., Foerch, C., & Weidauer, S. (2019). Central nervous system tuberculosis: Etiology, clinical manifestations and neuroradiological features. *Clinical Neuroradiology, 29*(1), 3–18. https:// doi.org/10.1007/s00062-018-0726-6

3. Morton, B., Stolbrink, M., Kagima, W., Rylance, J., & Mortimer, K. (2018). The early recognition and management of sepsis in Sub-Saharan African adults: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health, 15*(9), 2018. https://doi.org/10. 3390/ijerph15091818

4. Herce, M. E., Muyoyeta, M., Topp, S. M., Henostroza, G., & Reid, S. E. (2018). Coordinating the prevention, treatment, and care continuum for HIV-associated tuberculosis in prisons: A health systems strengthening approach. *Current Opinion in HIV and AIDS, 13*(6), 492–500. https://doi.org/10. 1097/COH.0000000000000508

5. Romha, G., Gebru, G., Asefa, A., & Mamo, G. (2018). Epidemiology of *Mycobacterium bovis* and *Mycobacterium tuberculosis* in animals: Transmission dynamics and control challenges of zoonotic TB in Ethiopia. *Preventive Veterinary Medicine, 158*, 1–17. https:// doi.org/10.1016/j.prevetmed.2 018.06.012

6. Hayward, S., Harding, R. M., McShane, H., & Tanner, R. (2018). Factors influencing the higher incidence of tuberculosis among migrants and ethnic minorities in the UK. *F1000Research, 7*, 461. https:// doi.org/10.12688/f1000research.14476.1

7. Ogbuoji, O., Qi, J., Olson, Z. D., Yamey, G., Nugent, R., Norheim, O. F., Verguet, S., & Jamison, D. T. (2017). Annual rates of decline in child, maternal, tuberculosis, and noncommunicable disease mortality across 109 low- and middle-income countries from 1990 to 2015. In D. T. Jamison, H. Gelband, S. Horton, P. Jha, R. Laxminarayan, C. N. Mock, R. Nugent (Eds.), *Disease control priorities: Improving health and reducing poverty* (3rd ed.). The International Bank for Reconstruction and Development / The World Bank. https://doi.org/ 10.1596/978-1-4648-0527-1

8. Haddad, M. B., Raz, K. M., Lash, T. L., Hill, A. N., Kammerer, J. S., Winston, C. A., Castro, K. G., Gandhi, N. R., & Navin, T. R. (2018). Simple estimates for local prevalence of latent tuberculosis infection, United States, 2011–2015. *Emerging Infectious Diseases, 24*(10), 1930–1933. https://doi.org/ 10.3201/eid2410.180541

9. Daftary, A., Mitchell, E. M. H., Reid, M. J. A., Fekadu, E., & Goosby, E. (2018). To end TB, first-ever high-level meeting on tuberculosis must address stigma. *American Journal of Tropical Medicine and Hygiene, 99*(5), 1114–1116. https://doi.org/10.4269 /ajtmh.18-0656

10. Migliori, G. B., Sotgiu, G., Rosales-Klintz, S., & van der Werf, M. J. (2018). European Union standard for tuberculosis care on treatment of multidrug-resistant tuberculosis following new World Health Organization recommendations. *European Respiratory Journal, 52*(5), 1801969. https://doi. org/10.1183/13993003.01969-2018

11. Habib, S., Rajdev, K., Pervaiz, S., Hasan Siddiqui, A., Azam, M., & Chalhoub, M. (2018). Pulmonary cavitary disease secondary to *Mycobacterium xenopi* complicated by respiratory failure. *Cureus, 10*(10), e3512. https://doi.org/10.7759/cureus.3512

12. Narasimhan, P., Wood, J., Macintyre, C. R., & Mathai, D. (2013). Risk factors for tuberculosis. *Pulmonary Medicine, 2013*, 828939. https://doi.org/10.1155/20 13/828939

13. Roy Chowdhury, R., Vallania, F., Yang, Q., Lopez Angel, C. J., Darboe, F., Penn-Nicholson, A., Rozot, V., Nemes, E., Malherbe, S. T., Ronacher, K., Walzl, G., Hanekom, W., Davis, M. M., Winter, J., Chen, X., Scriba, T. J., Khatri, P., & Chien, Y. H. (2018). A multi-cohort study of the immune factors associated with *M. tuberculosis* infection outcomes. *Nature, 560*(7720), 644–648. https://doi.org /10.1038/s41586-018-0439-x

14. Githinji, L. N., Gray, D. M., & Zar, H. J. (2018). Lung function in HIV-infected children and adolescents. *Pneumonia, 10*(1), 6. https://doi.org/10.1186/s41479-018-004 5-4

15. Young, D. B., Gideon, H. P., & Wilkinson, R. J. (2009). Eliminating latent tuberculosis. *Trends in Microbiology, 17*(5), 183–188. https://doi.org/10.1016/j.tim.20 09.02 .007