

INFLAMMATORY DISEASES IN ADOLESCENT CHILDREN AND THEIR EARLY DIAGNOSIS

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Abstract: Inflammatory diseases are common among children and adolescents and are a serious problem for the health care system. In children of adolescent age, inflammatory processes are often caused by deficiencies of the immune system, infectious diseases or allergic reactions. These diseases require early diagnosis and treatment, because the adolescent organism is in the period of growth and development, and these diseases can lead to long-term complications. Early diagnosis, diagnosis, treatment methods and prevention of inflammatory diseases in children of adolescent age are considered in the article.

Key words: Inflammation, adolescents, respiratory, urinary, gastrointestinal, musculoskeletal, appendicitis, asthma, pneumonia, arthritis, autoimmune, infections, biologics, vaccination, prevention.

O'SMIR YOSHIDAGI BOLALARDAGI YALLIG'LANISH KASALLIKLARI VA ULARNING ERTA TASHXISI

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Annotatsiya: Yallig'lanish kasalliklari bolalar va o'smirlar orasida keng tarqalgan va sog'liqni saqlash tizimi uchun jiddiy muammo hisoblanadi. O'smir yoshidagi bolalarda yallig'lanish jarayonlari ko'pincha immun tizimining kamchiliklari, yuqumli kasalliklar yoki allergik reaksiyalar tufayli yuzaga keladi. Bu kasalliklar erta tashxis va davolash talab qiladi, chunki o'smir organizmi o'sish va rivojlanish davrida bo'lib, bu kasalliklar uzoq muddatli asoratlarga olib kelishi mumkin. Maqolada o'smir yoshidagi bolalardagi yallig'lanish kasalliklarining erta tashxisi, diagnostikasi, davolash usullari va profilaktikasi ko'rib chiqiladi.

Kalit so'zlar: Yallig'lanish, o'smirlar, nafas olish tizimi, siydik tizimi, oshqozon-ichak tizimi, muskul-skelet tizimi, appenditsit, astma, pneumoniya, artrit, avtoimmun, infeksiyalar, biologik dori-darmonlar, vaksina, oldini olish.

1. Introduction. Inflammatory diseases are prevalent among adolescents, affecting various organ systems such as the respiratory, urinary, gastrointestinal, and musculoskeletal systems. These conditions are often multifactorial, involving genetic predisposition, environmental triggers, and lifestyle factors. Each condition presents unique symptoms and requires specific diagnostic and therapeutic approaches. Early recognition and intervention are crucial to prevent long-term complications and ensure better health outcomes. Additionally, understanding the epidemiology and risk factors for these conditions is key to implementing effective prevention strategies.

2. Common Inflammatory Diseases in Adolescents[2.4.6].

2.1 Respiratory System Diseases. Angina and Tonsillitis: Often caused by Streptococcus or Staphylococcus bacteria, these conditions are characterized by throat pain, difficulty swallowing, fever, and swollen lymph nodes. Severe cases may lead to abscess formation, rheumatic fever, or glomerulonephritis if untreated. Bronchial Asthma: Chronic inflammation of the airways causing wheezing, shortness of breath, and coughing. Asthma is often triggered by allergens, environmental pollutants, or respiratory infections and requires long-term management with bronchodilators and anti-inflammatory medications. Pneumonia: Bacterial, viral, or fungal infections of the lungs lead to symptoms such as fever, chest pain, productive cough, and difficulty breathing. Severe cases may cause complications like pleural effusion or sepsis, necessitating urgent medical attention[12,1,15,8].

2.2 Urinary Tract Infections (UTIs). UTIs are common among adolescents, especially females, due to shorter urethras and hormonal changes during puberty.

Symptoms include frequent urination, burning sensation during urination, lower abdominal pain, and cloudy or foul-smelling urine. Recurrent infections may indicate structural abnormalities or require further investigation.

2.3 Gastrointestinal Diseases. Appendicitis: Acute inflammation of the appendix presents with severe right lower quadrant abdominal pain, nausea, vomiting, and fever. Delayed diagnosis can lead to rupture and peritonitis, making prompt surgical intervention critical. Inflammatory Bowel Disease (IBD): Chronic inflammation of the gastrointestinal tract, including Crohn's disease and ulcerative colitis, leads to symptoms like diarrhea, abdominal pain, rectal bleeding, and weight loss. These conditions require long-term medical and nutritional management.

2.4 Joint and Musculoskeletal Inflammations.

Juvenile Rheumatoid Arthritis: Chronic joint inflammation causing pain, swelling, stiffness, and potential joint deformities if untreated. Morning stiffness and symmetrical joint involvement are common features. Reactive Arthritis: Triggered by infections, this condition involves joint pain, conjunctivitis, and urethritis. It may follow gastrointestinal or genitourinary infections and often requires a multidisciplinary approach. Osteomyelitis: Inflammation of the bone caused by bacterial infections, often presenting with localized pain, swelling, and fever. Early diagnosis and antibiotic therapy are essential to prevent chronic complications.

3. Symptoms and Clinical Signs. Inflammatory diseases in adolescents manifest with diverse symptoms, which vary depending on the affected organ system. Some common signs include:

Fever: A hallmark of systemic inflammation present in most conditions. Localized Pain: Throat pain (angina), abdominal pain (appendicitis), or joint pain (arthritis). Breathing Difficulties: Wheezing, dyspnea, or cough in asthma and pneumonia. Urinary Symptoms: Dysuria, urgency, and hematuria in UTIs. Gastrointestinal Disturbances: Diarrhea, bloating, and rectal bleeding in IBD. Fatigue and Weight Loss: Common in chronic inflammatory conditions such as IBD or rheumatoid arthritis[2,5,9].

4. Diagnostic Approaches. 4.1 Clinical Examination.

Detailed history and physical examination help identify specific symptoms and assess disease severity. Observation of vital signs, localized symptoms, and systemic features such as fever, rash, or lymphadenopathy is critical.

4.2 Laboratory Investigations. Blood Tests: Elevated white blood cell count, C-reactive protein (CRP), and erythrocyte sedimentation rate (ESR) indicate inflammation. Autoantibody tests may help diagnose autoimmune conditions. Urine Analysis: Detects leukocytes, nitrites, and bacteria in UTIs. Proteinuria or hematuria may indicate renal involvement. Microbiological Cultures: Identify causative pathogens in infections, guiding targeted therapy. Biomarkers: Procalcitonin and

interleukin-6 are emerging as specific markers for differentiating bacterial from viral infections[11,6,1,4].

4.3 Imaging Studies. Ultrasonography: Useful for detecting appendicitis, kidney infections, and joint effusions. Doppler ultrasonography can assess blood flow abnormalities in inflamed tissues.

Radiography and CT Scans: Provide detailed images for diagnosing pneumonia, fractures, or abscesses. CT is particularly useful in abdominal and pelvic inflammatory diseases.

MRI: Effective for assessing soft tissue and joint inflammations, especially in autoimmune conditions. Endoscopy and Biopsy: Necessary for diagnosing IBD and assessing mucosal inflammation[2].

5. Treatment Modalities. Treatment of inflammatory diseases depends on the underlying cause, severity, and patient-specific factors. A multidisciplinary approach is often required.

5.1 Pharmacological Interventions. Antibiotics: First-line treatment for bacterial infections such as tonsillitis, pneumonia, and UTIs. Broad-spectrum antibiotics are used initially, followed by targeted therapy based on culture results. Antiviral Medications: Used for conditions caused by viruses, such as certain types of pneumonia or viral gastroenteritis. Non-Steroidal Anti-Inflammatory Drugs (NSAIDs): Relieve pain and reduce inflammation in arthritis, IBD, and other conditions. Long-term use requires monitoring for gastrointestinal side effects[3,8,10]. Corticosteroids: Prescribed for severe or chronic inflammation, such as asthma exacerbations, IBD flares, or autoimmune diseases. Tapering is essential to avoid withdrawal symptoms. Immunosuppressants and Biologics: Used in autoimmune diseases like juvenile arthritis or IBD to control immune responses. Examples include methotrexate and monoclonal antibodies targeting inflammatory pathways[14].

5.2 Supportive Care. Adequate hydration, rest, and nutritional support are essential during recovery. Physiotherapy and occupational therapy help maintain joint mobility and function in arthritis.

6. Prevention Strategies. Vaccination: Protects against respiratory infections, hepatitis, and other communicable diseases. Hygiene Practices: Regular handwashing, personal hygiene, and safe food handling prevent the spread of infections. Healthy Lifestyle: Balanced diet, regular exercise, and sufficient sleep strengthen immunity and reduce the risk of chronic diseases.

Avoiding Triggers: Identification and avoidance of allergens in asthma and dietary triggers in IBD. Routine Screening: Regular health check-ups help detect and manage conditions at an early stage[1,3,5].

7. Statistical Overview. Epidemiology: According to recent studies, 30-40% of adolescents experience at least one episode of an inflammatory disease annually. UTIs

are the most common, accounting for 25% of cases, followed by respiratory infections (20%) and gastrointestinal diseases (15%).

Trends: The incidence of autoimmune diseases like IBD and juvenile arthritis has been rising, with a 10% increase over the past decade. **Hospital Admissions:** Inflammatory diseases are responsible for 18% of adolescent hospital admissions, with an average length of stay of 3-5 days. **Laboratory Data:** Studies show that elevated CRP (>10 mg/L) is present in 90% of bacterial infections, while viral infections often show normal or slightly elevated levels.

8. Importance of Early Diagnosis and Treatment Early detection of inflammatory diseases can: Prevent disease progression and chronic complications. Reduce hospitalizations and healthcare costs. Improve the overall quality of life and functional outcomes for adolescents. Enable timely interventions that reduce the psychological and social impact of chronic conditions on adolescents and their families.

9. Research and Future Directions. Ongoing research in molecular biology and immunology is paving the way for personalized medicine in treating inflammatory diseases. Development of advanced diagnostic tools, such as biomarkers and genetic testing, can facilitate early detection.

New therapies, including biologics and gene therapy, hold promise for more effective and targeted treatment with fewer side effects[7,11,9].

Public health initiatives focusing on education, vaccination, and preventive care can significantly reduce the burden of inflammatory diseases.

10. Conclusion. Inflammatory diseases in adolescents pose significant health challenges. Comprehensive clinical evaluation, advanced diagnostic techniques, and timely therapeutic interventions are essential for effective management. Preventive measures and health education play a vital role in reducing the incidence of these conditions and promoting long-term health among adolescents. Collaborative efforts from healthcare providers, educators, and families are crucial to ensure adolescents achieve their full health potential[14].

REFERENCES:

1. Tursunov Feruz O'Ktam O'G'Li, Raximova Gulchiroy Olim Qizi, Isroilova Umidaxon, Turayeva Shaxnoza ASSESSMENT OF CARBOHYDRATE METABOLISM IN PATIENTS WITH DIABETES AND COVID-19 // ReFocus. 2022.
2. Кудратова З.Э., Турсунов Ф.У., Мусаева Ф.Р., Абдулхаев Иброхим АТИПИК МИКРОФЛОРА ЭТИОЛОГИЯЛИ ЎТКИР ОБСТРУКТИВ БРОНХИТЛАРИНИНГ ЎЗИГА ХОС КЛИНИК КЕЧИШИ // ReFocus. 2022.
3. Feruz O'ktam o'g T. et al. Qandli diabet va covid-19 bilan kasallangan bemorlarda glikemiya va glyukozuriya taxlili //Journal of new century innovations. – 2023. – T. 23. – №. 1. – С. 94-98.
4. Dilshod ogli X. H., Uktam ogli T. F. RIVOJLANAYOTGAN

MAMLAKATLARDA ICHIMLIK SUVINI TOZALASH VA MUAMMOLAR.
– 2023.

5. Burkhanova D. S., Tursunov F. O., Musayeva F. THYMOMEGALY AND THE STATE OF HEALTH OF CHILDREN IN THE FIRST YEAR OF LIFE //Galaxy International Interdisciplinary Research Journal. – 2023. – T. 11. – №. 10. – C. 62-64.
6. Feruz O'ktam o'gli T., Mengdobilovich M. N. ANALYSIS OF GLYCEMIA AND GLUCOSURIA IN PATIENTS WITH DIABETES AND COVID-19 //Open Access Repository. – 2023. – T. 4. – №. 2. – C. 177-181.
7. GLOMERULONEFRIT KASALLIGIDA SITOKINLAR AHAMIYATI LK Isomadinova, FA Daminov Journal of new century innovations 49 (2), 117-120
8. СОВРЕМЕННАЯ ЛАБОРАТОРНАЯ ДИАГНОСТИКА ХРОНИЧЕСКОГО ПИЕЛОНЕФРИТА У ДЕТЕЙ ЛК Исмадинова, ФА Даминов Journal of new century innovations 49 (2), 112-116
9. SAMARQAND TUMANI KESIMIDA HOMILADOR AYOLLARDA VITAMIN D YETISHMOVCHILIGI QZEMF Isomadinova L.K JOURNAL OF NEW CENTURY INNOVATIONS 45 (1), 177-180
10. Dushanova G. A., Nabiyeva F. S., Rahimova G. O. FEATURES OF THE DISTRIBUTION OF HLA-ANTIGENS AMONG PEOPLE OF THE UZBEK NATIONALITY IN THE SAMARKAND REGION //Open Access Repository. – 2023. – T. 10. – №. 10. – C. 14-25.
11. Berdiyeva Sh.Sh., Ahadova M.M., Ochilov S.A. COMPLICATIONS OF TREATMENT OF ACUTE HEMATOGENOUS OSTEOMYELITIS, LITERATURE REVIEW, Galaxy International Interdisciplinary Research Journal 293-298
12. Kudratova Zebo Erkinovna, Karimova Linara Alixanovna Age-related features of the respiratory system // ReFocus. 2023. №1. URL: <https://cyberleninka.ru/article/n/age-related-features-of-the-respiratory-system>.
13. Бердиярова Ш.Ш., Юсупова Н.А., Ширинов Х.И. Клинико-лабораторная диагностика внебольничных пневмоний у детей, Вестник науки и образования, 80-83
14. Isomadinova L.K. Qudratova Z.E. Shamsiddinova D.K.Samarqand viloyatida urotiliaz kasalligi klinik-kechishining o'ziga xos xususiyatlari. Central asian journal of education and innovation №10. 2023, P. 51-53
15. Berdiyeva Sh.Sh., Yusupova N.A., Murtazaeva N.K., Ibragimova N.S. Clinical and laboratory features of chronic hematogenic osteomyelitis// TJM - Tematics journal of Microbiology ISSN 2277-2952 Vol-6-Issue-1-2022, P. 36 – 43.