

Comparative Characteristics of Genitourinary System Diseases among Adults and Children in Osh Region from 2010 to 2019 Years

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Abstract

Purpose of this work is to perform analysis on comparative characteristics of genitourinary system diseases among child and adult population in Osh region for the period of 2010 to 2019 years. **Research materials and methods:** the work carried out a retrospective study of official statistics on the main indicators characterizing the incidence in adult and child population (adolescents and children under 14 years old) in Osh region for diseases of genitourinary system for period from 2010 to 2019 years in accordance with the ICD classification. Statistical analysis of obtained results was carried out Microsoft Excel on a workstation with an Intel® Core™ i7 8665U processor 1.9 GHz 2.11 GHz, 16 GB Ram on the Windows 10 platform, considering the determination of the coefficient of statistically significant difference p at values of $p < 0.05$. **Results:** the level of primary morbidity in children is lower than in adults. The lowest rates of general morbidity of the genitourinary system were registered for the adult and child population in 2019 (31722 per 100000 adults and 28182 per 100000 children, respectively). A similar trend is observed in the registration of primary morbidity: among the adult population, the rates are higher compared to children. Among children under 14 years of age, the lowest rates were noted both among the general incidence and among the newly registered: the lowest values for this category were recorded in 2019 (941 and 375 per 100 thousand of the child population, respectively). **Output:** general and primary morbidity study dynamics in Osh region for period from 2010 to 2019 years indicates their prevalence among the adult population compared with children. In adolescents of the Osh region, the nature of studied morbidity rates tends to decrease after 2017; in children under 14 years old from decrease from 2010 to 2019 years. The maximum values of general morbidity in children aged from 1 to 4 years old were recorded in 2017 year (4370 per 100 thousand of the child population); in children under 1 year old in 2016 year (249 per 100 thousand child population).

Keywords: Primary morbidity; general morbidity; genitourinary system diseases; Osh region; child population.

INTRODUCTION

Diseases of the genitourinary system in children and adults are a serious medical and social problem. Early appearance, untimely diagnosis and lack of adequate therapy in children contribute to the chronicity of the pathology and the appearance of complications already in adult reproductive age. The annual increase in this category of patients is 1.3% [Pakhomova and Maksimova, 2017; Kuprienko and Smirnova, 2018]. Microbial inflammatory diseases of the urinary systems are one of the most common pathologies in childhood, and the tendency of the inflammatory process to recur and progress with the formation of nephrosclerosis indicates relevance of this problem [Averyanova *et al*, 2017].

A pathogenetically substantiated clinical and microbiological classification of bacteriuria has been developed which makes it possible to determine its clinical significance in urinary tract infections and highlight the variants of bacteriuria: recurrent, which is a marker of infection of the urinary system; persistent and episodic ("transient"), which is detected once and does not require treatment [Vyalkova and Gritsenko, 2017].

Clinical symptoms and signs or asymptomatic properties of genitourinary system diseases are similar and in many cases the lack of suitable diagnostic techniques leads to misdiagnosed disease [Behzadi *et al*, 2019]. Additional clinical descriptors include urinary tract infection encompasses several clinical syndromes such as cystitis, pyelonephritis, and renal or perinephric abscess [Cortes-Penfield *et al*, 2017].

Thus, infectious processes in the genitourinary tract and their consequences in the reproductive sphere have a significant negative impact. Urinary tract infections are widespread among children often have a latent or relapsing

course. In the structure of the urinary system diseases in children microbial inflammatory lesions in kidneys and urinary tract are 70-80% [Kozlovsky, 2014].

The study of general and primary morbidity indicators of genitourinary system allows us to assess the spread of pathology among population of a certain region, the dynamics of indicators may indicate the effectiveness of therapeutic and preventive measures aimed at preventing the development of pathology. Dynamics of general and primary morbidity of the genitourinary system analysed in Osh region for the period from 2010 to 2019 years, examined structure of nosologies that make up both general and primary morbidity, and noted that chronic pyelonephritis accounts for the highest percentage [Maamatova *et al*, 2022].

Not so far, studies on newborns microflora formation were conducted in various heights in the southern region of Kyrgyzstan, under examination of 133 women in labor aged from 17 to 43 years old, and 133 newborns [Orunbaeva *et al*, 2020].

Analysis of the respiratory organs' diseases incidence among population was carried out in three areas of Kyrgyzstan, in which samples of atmospheric air were taken in the village Papan, village Gulbar of the Aravan district, near the Osh city [Topchubaeva *et al*, 2022].

The patients' condition with gastrointestinal tract diseases and stomach pathology in the Osh Medical Regional Clinical Hospital and in medical clinic of the Osh State University were studied for period from 2018 to 2022 years [Moldoev *et al*, 2022].

The role of hypoxia in the development and course of acute mountain disease, high altitude hypoxia and human adaptation problems [Muratov, 2015], the structure of brucellosis incidence among adults and children has been studied in the context of the administrative districts in Osh region over the past 10 years covering periods from 2011 to 2020 years in which conclusions were made on the study objectives, where it was recommended to make specific corrections in antiepidemic and antiepidemic measures, in particular, timely and complete coverage of laboratory examination [Abdrzakova *et al*, 2021].

In this work, research objective was aimed at comparison of genitourinary system incidence rates on adult and child population in the Osh region for period from 2010 to 2019 years.

EXPERIMENTAL

The work carried out a retrospective study of official statistics on the main indicators characterizing the incidence in adult and child population (adolescents and children under 14 years old) in Osh region for diseases of genitourinary system for period from 2010 to 2019 years in accordance with the ICD classification. Statistical analysis of obtained results was carried out Microsoft Excel on a workstation with an Intel® Core™ i7 8665U processor 1.9 GHz 2.11 GHz, 16 GB Ram on the Windows 10 platform, considering determination of the coefficient of statistically significant difference p at values of $p < 0.05$.

RESULTS AND DISCUSSION

The dynamics of overall incidence of diseases of the genitourinary system in the period from 2010 to 2019 in the Osh region (per 100 thousand adults) is shown in Figure 1.

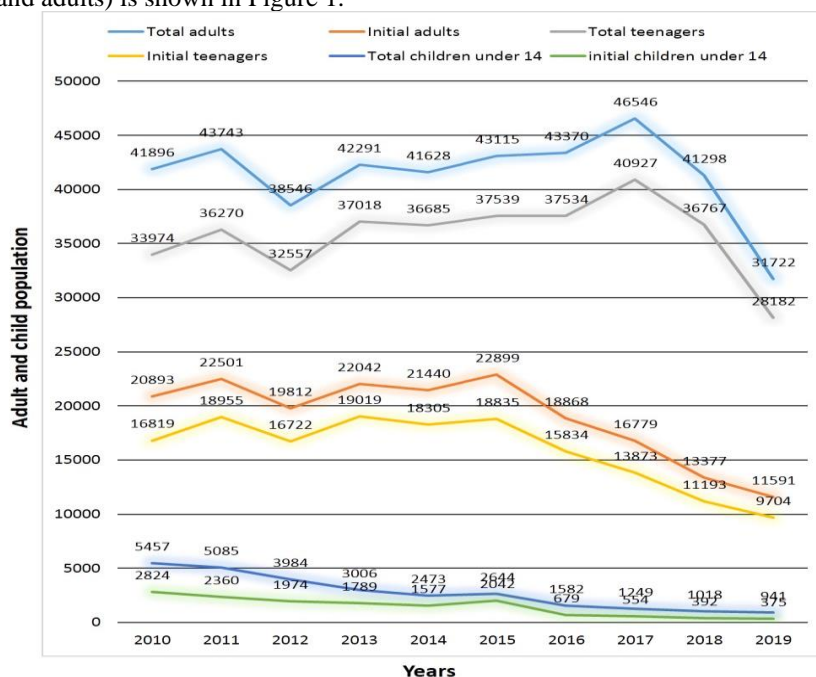


Figure 1: Characteristics of the dynamics of the overall incidence of diseases of the genitourinary system of the adult and child population in the period from 2010 to 2019 years in the Osh region (per 100 thousand population). Note: *p<0.05 is statistically significant differences between values within groups.

Presented data indicate that the level of primary morbidity in children is lower than in adults. The lowest rates of general morbidity of the genitourinary system were registered for the adult and child population in 2019 year (31722 per 100000 adults and 28182 per 100000 children, respectively).

A similar trend was observed in registration of primary morbidity: among the adult population, the rates are higher compared to children. Among children under 14 years of age, the lowest rates were noted both among the general incidence and among the newly registered: the lowest values for this category were recorded in 2019 year (941 and 375 per 100 thousand of the child population, respectively).

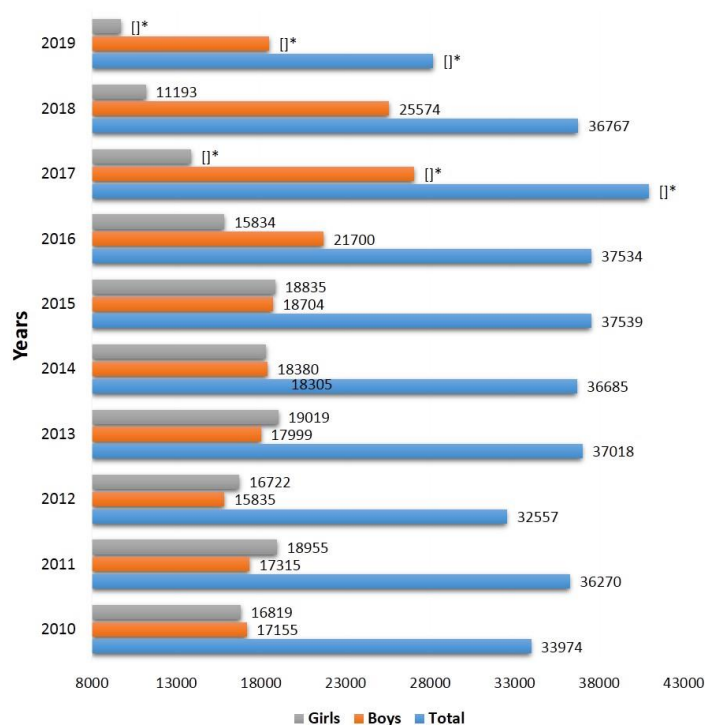


Figure 2: Comparative characteristics of the overall incidence of adolescents according to gender. Note: *p<0.05 statistically significant differences between values within groups.

The lowest values of the general morbidity rate among adolescents were registered in 2019 year both among girls and boys (9704 per 100 thousand of the population and 18478 per 100 thousand of population, respectively); maximum in 2017 year: for girls 13873 per 100,000 population; for boys 27054 per 100000 population.

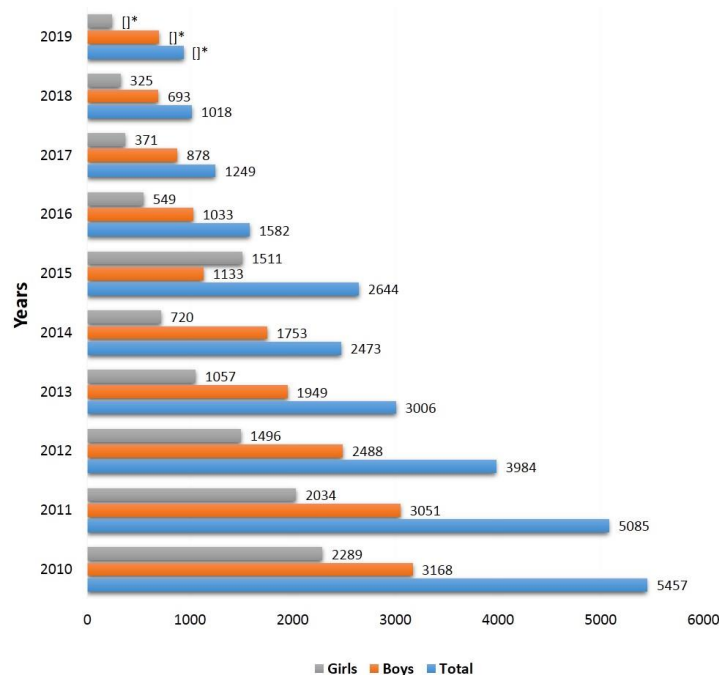


Figure 3: Comparative characteristics of general morbidity rates in children under 14 years of age, according to gender. Note: *p < 0.05 is statistically significant differences between values within groups. A trend was noted indicating a decrease in incidence rates both among boys and girls under 14 years old from 2010 to 2019 years. (Lowest values in 2019: 699 thousand boys and 242 thousand girls per 100 thousand children). Additionally, the dynamics of general and newly detected morbidity among certain subgroups of the child population was analysed: up to 1 year and from 1 to 4 years old as the most vulnerable category shown in Figure 4.

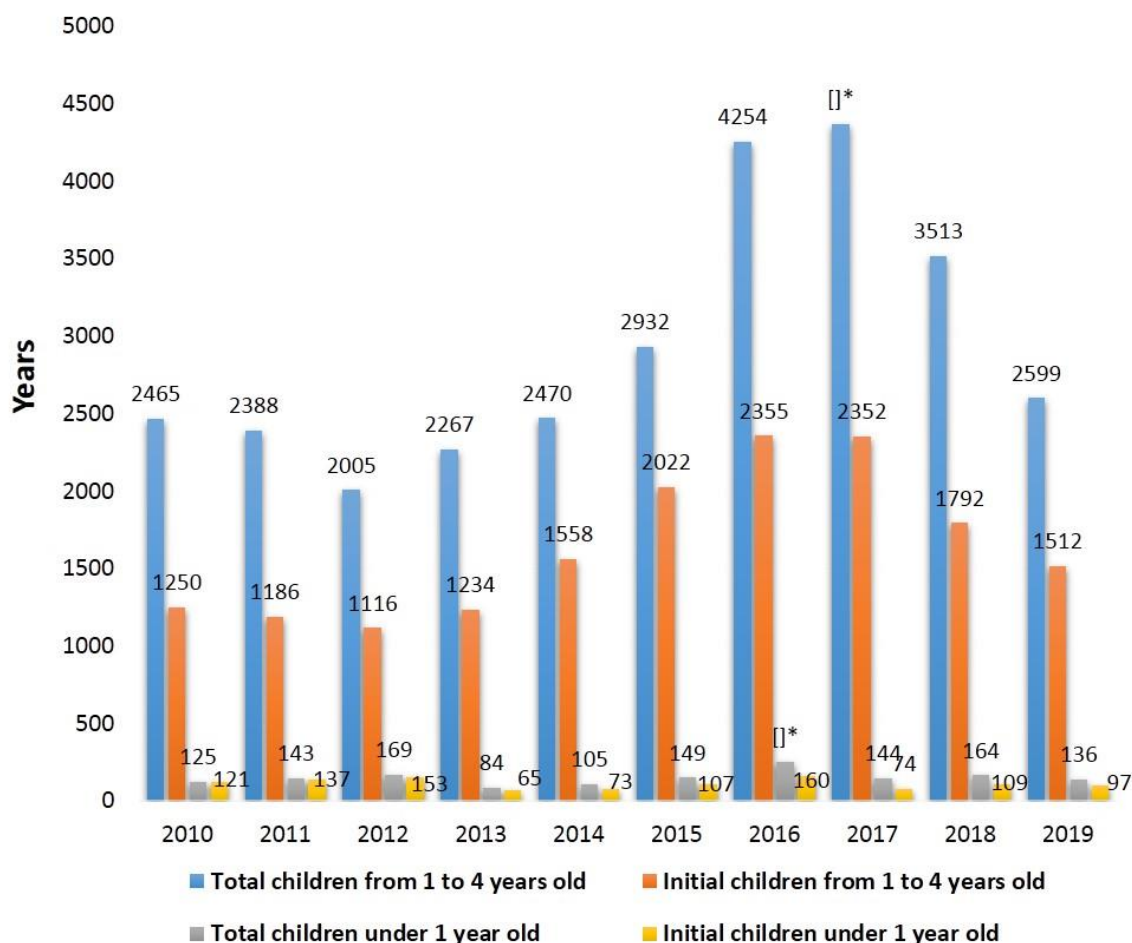


Figure 4: Comparative characteristics of general and newly diagnosed morbidity indicators in children under 1 year old and from 1 to 4 years old. Note: *p<0.05 statistically significant differences between values within groups.

The presented data indicate a wave-like trend in dynamics of these indicators; from 2017 to 2019 years, there is a downward trend in the overall and newly detected incidence rates. The maximum values of general morbidity in

children aged from 1 to 4 years old were recorded in 2017 year (4370 per 100 thousand of the child population); in children under 1 year old in 2016 year (249 per 100 thousand child population).

Diseases of the genitourinary system are important for reproductive health of the population, especially among those of childbearing age. In this regard, great importance should be given to diseases of the genitourinary system in children for their timely detection, treatment and development of preventive measures. A number of works have demonstrated an analysis of the incidence of the genitourinary system in children from different regions, their dynamics over the past few years [Kozlovsky, 2014; Vyalkova and Gritsenko, 2017]. Total mortality in genitourinary system diseases by administrative territories in the southern region of Kyrgyzstan for 1991 to 2010 years were registered as 6 people in a year [Shamshiev, 2012].

In our work, we also analysed the data on the general and newly detected morbidity among both the adult and child population in the Osh region, and noted the trend of their spread over the period from 2010 to 2019 years.

CONCLUSION

At the end of research, the following conclusions were made: study of general and primary morbidity dynamics in the Osh region for the period from 2010 to 2019 years indicates their prevalence among the adult population compared with children. In adolescents in the Osh region, the nature of studied morbidity rates tends to decrease after 2017 year; in children under 14 years old decrease is observed from 2010 to 2019 years. The maximum values of general morbidity in children aged from 1 to 4 years old were recorded in 2017 year (4370 per 100 thousand of the child population); in children under 1 year old in 2016 year (249 per 100 thousand child population).

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