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TENDENCY OF INCIDENCE WITH NONSPECIFIC ULCERATIVE COLITIS IN KAZAKHSTAN

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Nonspecific ulcerative colitis is a chronic inflammatory bowel disease of an immune nature with frequent localization in the large intestine. A pattern is noted that in the northern and western continents they suffer more often than in Asia. To identify risk factors in a population, epidemiological studies must firstly assess the incidence of disease.

Aim. To study the trends of nonspecific ulcerative colitis (NUC) incidence in Kazakhstan.

Material and methods. The research material was compiled summary reporting form number 12 of the Ministries and the Health of the Republic of Kazakhstan on new cases of nonspecific ulcerative colitis (ICD-10 – K51), established for the first time. A retrospective study was used as the main method for studying the incidence of NUC. According to generally accepted methods of biomedical statistics, extensive, intensive and equalized indicators of the incidence of NUC were calculated.

Results and discussion. For 2013-2018 14,079 new cases of NUC were registered in the republic, of which 15 were in children – 15.3%, teenagers – 4.8% and adults – 79.8%. The average annual incidence rate of NUC in the entire population of Kazakhstan was 13.5±2.1‱ (95% CI=9.4-17.50/0000), and for population groups having been studied was: in children – 7.2±2.1‱ (95%CI=3.8-12.0‱), among teenagers – 18.7±5.0‱ (95% CI=9.0-28.5‱) and the adult population 15.4±1.9‱ (95% CI=11.8-19.1‱). The difference in morbidity between groups was statistically significant. Disease tended to decrease in all age groups: in the adult population (T=−12.3%), children (T=−43.7%) and in adolescents (T=-50.1%).

Conclusion. According to the dynamics, NUC incidence in Kazakhstan has a decreased tendency due to the child and adolescent population. The results obtained are recommended to be taken into account by health authorities when making managerial decisions.

Keywords: nonspecific ulcerative colitis, morbidity, trends, Kazakhstan.

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ҚАЗАҚСТАНДАҒЫ СПЕЦИФИКАЛЫҚ ЕМЕС ОЙЫҚ-ЖАРАЛЫ КОЛИТ АУРУШАНДЫҒЫНЫҢ ТЕНДЕНЦИЯСЫ

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Спецификалық емес ойық-жаралы колит − иммундық сипаттағы жиі, жуан ішекте оқшауланатын, ішектің созылмалы қабынулық ауруы. Солтүстік және батыс континенттерде Азияға қарағанда жиі зардап шегетіндер байқалды. Популяциядағы қауіп факторларын анықтау үшін эпидемиологиялық зерттеулер аурудың жиілігін бағалауы керек.

Зерттеу мақсаты. Қазақстандағы спецификалық емес ойық-жаралы колит (СЖК) ауруының даму тенденциясын зерттеу.

Материал және әдістері. Зерттеу материалы Қазақстан Республикасы Денсаулық Сақтау Министрлігінің жаңа деректері – спецификалық емес ойық-жаралы колитке (МКБ 10 – K51) қатысты No 12 жылдық форма болды. СЖК жиілігін зерттеудің негізгі әдісі ретінде ретроспективті зерттеу қолданылды. Биомедициналық статистиканың жалпы қабылданған әдістері бойынша СЖК ауруының кең, интенсивті және теңестірілген көрсеткіштері есептелді.

Нәтижелері. 2013-2018 жж. республикада 14 079 жаңадан СЖК диагнозымен тіркелді, олардың ішінде: балалар – 15,3%, жасөспірімдер – 4,8% және ересектер – 79,8%. Қазақстанда жалпы тұрғындардың ішінде СЖК орташа жылдық көрсеткіші 13,5±2,1$^0/_{0000}$ (95% СИ=9,4-17,5$^0/_{0000}$) құрады, және келесі: балаларда – 7,2±2,1$^0/_{0000}$ (95% СИ=3,8-12,0$^0/_{0000}$), жасөспірімдерде – 18,7±5,0$^0/_{0000}$ (95% СИ=9,0-28,5$^0/_{0000}$), ересектерде – 15,4±1,9$^0/_{0000}$ (95% СИ=11,8-19,1$^0/_{0000}$). Топтар арасындағы аурушаңдықтың айырмашылығы статистикалық тұрғыдан маңызды болды. Барлық жас топтарында сырқаттанушылық тенденциясының төмендеу үрдісі байқалды: ересектерде (Т=−12,3%), балаларда (Т=−43,7%) және жасөспірімдерде (Т=−50,1%).

Қорытынды. Динамикада балалар мен жасөспірімдердің есебінен жалпы Қазақстандағы спецификалық емес ойық-жаралы колит аурушаңдығының төмендеу үрдісі байқалады. Алынған нәтижелерді денсаулық сақтау органдары басқарушылық шешімдер қабылдаған кезде ескеру ұсынылады.

Негізгі сөздер: спецификалық емес ойық-жаралы колит, аурушаңдық, тенденциялар, Қазақстан.

РЕЗЮМЕ

ТЕНДЕНЦИЯ ЗАБОЛЕВАЕМОСТИ НЕСПЕЦИФИЧЕСКИМ ЯЗВЕННЫМ КОЛИТОМ В КАЗАХСТАНЕ

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Неспецифический язвенный колит – хроническое воспалительное заболевание кишечника, иммунного характера с частой локализацией в толстой кишке. Отмечается закономерность, что в северных и западных континентах страдают чаще, чем в Азии. Для определения факторов риска в популяции эпидемиологические исследования должны сначала оценить частоту заболевания.

Цель. Изучить тенденции заболеваемости неспецифическим язвенным колитом (НЯК) в Казахстане.

Материал и методы. Материалом исследования послужили данные сводной отчетной формы №12 Министерства здравоохранения Республики Казахстан о новых случаях НЯК (МКБ 10 – K51), установленных впервые в жизни. В качестве основного метода при изучении заболеваемости НЯК использовалось ретроспективное исследование. По общепринятым методам медико-биологической статистики вычислены экстенсивные, интенсивные и выравненные показатели заболеваемости НЯК.

Результаты и обсуждения. За 2013-2018 гг. в республике было зарегистрировано 14 079 новых случаев НЯК, из них у детей – 15,3%, подростков – 4,8% и взрослых – 79,8%. Среднего-

довой показатель заболеваемости НЯК у всего населения Казахстана составил 13,5±2,1$\%_{0000}$ (95% ДИ=9,4-17,5$\%_{0000}$), а у изучаемых групп населения составил: у детей – 7,2±2,1$\%_{0000}$ (95% ДИ=3,8-12,0$\%_{0000}$), у подростков – 18,7±5,0$\%_{0000}$ (95% ДИ=9,0-28,5$\%_{0000}$) и у взрослого населения – 15,4±1,9$\%_{0000}$ (95% ДИ=11,8-19,1$\%_{0000}$). Различия в заболеваемости между группами были статистически значимые. Тренды заболеваемости имели тенденцию к снижению во всех возрастных группах: у взрослого населения (T=−12,3%), у детей (T=−43,7%) и у подростков (T=−50,1%).

Выводы. В динамике заболеваемость НЯК в Казахстане в целом имеет тенденцию к снижению за счет детского и подросткового населения. Полученные результаты рекомендуются учитывать органам здравоохранения при принятии управленческих решений.

Ключевые слова: неспецифический язвенный колит, заболеваемость, тренды, Казахстан.

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Nonspecific ulcerative colitis is one of the difficultly diagnosed inflammatory bowel diseases and is based on diffuse ulcerative-inflammatory lesions of the colon, and often accompanied by various extra intestinal manifestations, which cause certain difficulties in its diagnosis and diagnosis in the early stages [1, 2, 4, 5]. The results of epidemiological studies of NUC in the world have shown that their incidence per 100 thousand of the population is 50-230 cases and the annual increase in patients is from 5-20 cases per 100 thousand of the population [3, 4]. At the same time, studies in the United States revealed a racial difference, as in the Caucasoid race, NUC occurs 3-5 times more often than in African Americans, while in Jews this pathology occurs in general 3.5 times more often than in others [3]. The disease occurs in all age groups, but the main increase of the incidence occurs in the working age of 20-40 years. Men and women get sick with the same frequency. Moreover, in most cases of inflammatory bowel diseases, NUC is diagnosed later from the time when first clinical symptoms appear [4, 7].

Aim. To study the trends of nonspecific ulcerative colitis (NUC) incidence in Kazakhstan.

MATERIAL AND METHODS

The material of the study was data from the reporting form No. 12 of the Ministry of Health of the Republic of Kazakhstan on patients with a diagnosis of Nonspecific Ulcerative Colitis (NUC) (ICD 10 – K 51), established for the first time in their life.

A retrospective study (2013-2018) with descriptive and analytical methods of modern epidemiology was used as the main method for studying the incidence of NUC. Extensive and rough indicators of morbidity are determined by the generally accepted methodology used in modern statistics. The mean value (M), the mean error (m) and the average annual rates of increase and decrease (T, %), 95% confidence intervals (95% CI) were calculated. The dynamics of morbidity indicators have been studied over 6 years, while trends are determined by the least squares method. The geometric mean was used to calculate the average annual growth rates and decrease in the time series. The incidence rates for children in general (up to 15 years), adolescents (15-17 years), adults (18 years and over) and the total population are calculated for 100,000 ($\%_{0000}$) of the relevant population.

RESULTS AND DISCUSSION

During the study period, in Kazakhstan there were 14,079 new cases of NUC are: children (under 15 years) – 2,160 (15.3%), teenagers (15-17 years) – 679 (4.8%) and adults (18 years and older) – 11,240 cases (79.8%).

The average annual incidence of NUC among the entire population of Kazakhstan was 13.5±2.1$\%_{0000}$ (95% CI=9.4-17.5$\%_{0000}$) and in the dynamics of incidence tended to decrease from 21.7±0.4$\%_{0000}$ (95% CI=21.0-22.4$\%_{0000}$) in 2013 to 10.6±0.2$\%_{0000}$ (95% CI=10.1-11.1$\%_{0000}$) in 2018, the difference is statistically significant (t=24.82; p=0.000). The above trend remained unchanged when this indicator is had been leveled, and the average annual rate of decline was T=−17.7% (Figure 1).

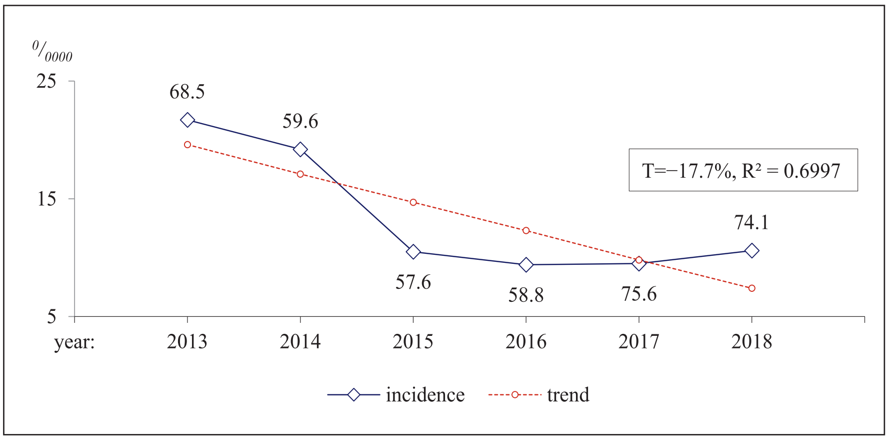

Figure 1 – Dynamics of the non-specific ulcerative colitis incidence of in the entire population of Kazakhstan for 2013-2018

The average annual incidence of NUC varied among the studied population groups. So, for children it was 7.9±2.1$\%_{0000}$ (95% CI=3.8-12.0$\%_{0000}$), for adolescents and adults it had been 18.7±5.0$\%_{0000}$ (95% CI=9.0-28.5$\%_{0000}$) and 15.4±1.9$\%_{0000}$ (95% CI=11.8-19.1$\%_{0000}$), respectively (Figure 2).

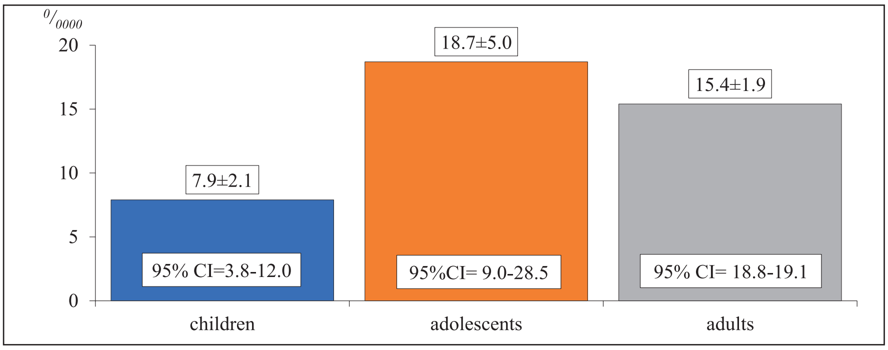

Figure 2 – Average annual incidence of NUC in the studied population groups in Kazakhstan for 2013-2018

According to the graph, the incidence of NUC in the childish population of Kazakhstan decreased from 14.3±0.6‱ (95% CI=13.2-15.4‱) to 2.4±0.2‱ (95% CI=2.0-2.9‱) for the time period of 2013–2018, the changes are statistically significant (t=18.82; p=0.000), and the average annual rate of decline was T=–43.7% (Figure 3).

The incidence of NUC among adolescents decreased from 42.1±2.4‱ (95% CI=37.3-46.8‱) in 2013 to 5.1±0.9‱ (95% CI=3.2-6.9‱) in 2018, also the difference is statistically significant (t=14.44; p=0.000). Also, the average annual rate of decline was T=–50.1% (Figure 4).

In dynamics, the incidence of NUC in the republic decreased among the adult population: from 23.1±0.4‱ (95% CI=22.2-23.9‱) in 2013 to 14.2±0.3‱ (95% CI=13.6-14.9‱) in 2018 and the difference in these years is statistically essential (t=17.80; p=0.000). The average annual rate of decline was T=–12.3% (Figure 5).

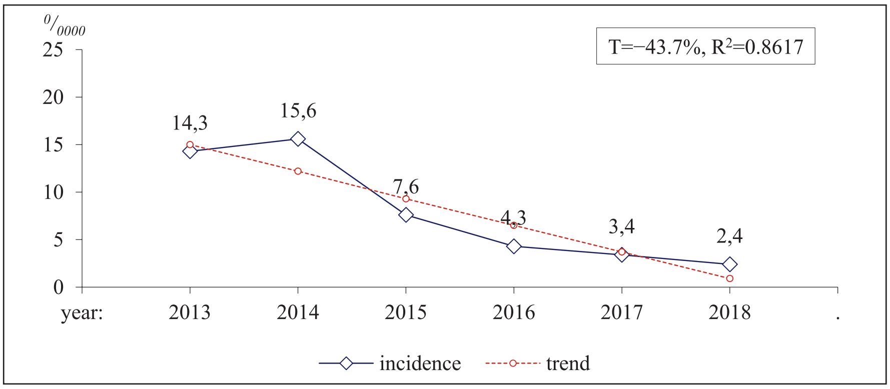

Figure 3 – Dynamics of the incidence of non-specific ulcerative colitis in the childish population of Kazakhstan for 2013-2018

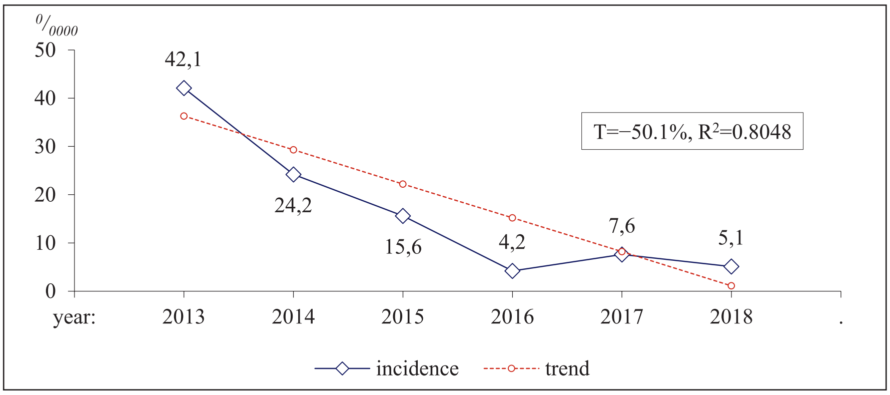

Figure 4 – Dynamics of the incidence of non-specific ulcerative colitis in the adolescent population of Kazakhstan for 2013-2018

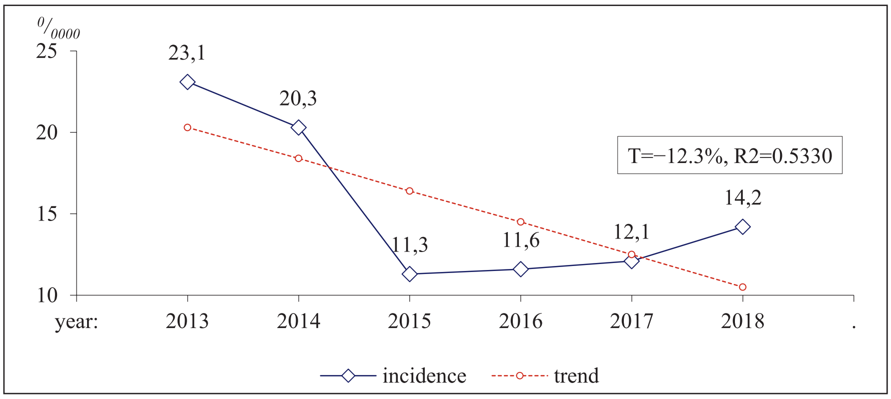

Figure 5 – Dynamics of the incidence of non-specific ulcerative colitis in the adult population of Kazakhstan for 2013-2018

CONCLUSION

Trends in the incidence of NUC in various studied groups of the population allowed us to assess and identify a general decreasing trend. In Kazakhstan, over the years under study, the incidence among children under 15 years old (T=–43.7%), adolescents (15-17 years old) (T=–50.1%) and the adult population (T=–12.3%) tended to decrease. At the same time, in developed countries, the incidence of NUC in children and adolescents increases annually, and our results indicate, on the contrary, a sharp decrease in these groups.

The increase of morbidity rates among young employable citizens is a particular worldwide concern in our century. Recently, it has been found out that there is an increase in the detection of colon cancer in patients with UC, NUC, CD (Crohn's Disease) throughout many economically developed countries, which may be associated with an earlier onset of inflammatory bowel diseases.

To optimize effective diagnosis, treatment and dispensary observation, it is necessary to create a unified information and analytical system for monitoring and assessing this disease.

Research transparency

Research did not have a sponsorship. The authors are absolutely responsible for presenting the release script for publication.

Declaration about financial and other relations

The authors did not get the honorary for the article.

Authors' contribution:

Kenzhebekova Shyryn – data summary, primary processing of the material, writing the text of the article.

Sakhanov Sauirbay, Bilyalova Zarina – statistical processing of the material, writing the text of the article (material and methods, conclusion).

Turebaev Dulat, Kulmirzayeva Dariyana, Urazova Saltanat – writing the text of the article (introduction, conclusions).

Izimbergenov Mirsaid, Amanshayeva Akmaral, Nurtazinova Gauhar, Kozhakhmetov Saken – writing the text of the article (results), editing.

Igissinov Nurbek – concept and design of the study, approval of the final version of the article.

Conflict of interest

The authors declare no conflict of interest.

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