

МІНІСТЕРСТВО ОСВІТИ ТА НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
МЕДИЧНИЙ ІНСТИТУТ



**АКТУАЛЬНІ ПИТАННЯ**  
**ТЕОРЕТИЧНОЇ ТА КЛІНІЧНОЇ МЕДИЦИНИ**  
**Topical Issues of Theoretical and Clinical Medicine**

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investigation, RVE median incidence is the highest. The AEI situation becomes more complicated with increase in diarrheal infection outbreaks. Every third case of disease outbreak is connected with public food facilities, every fourth is connected with PSI. Most often outbreaks were caused by salmonella and were of mixed outbreak nature. Disease transmission way by food was dominant. Almost 20 % of all AEI outbreaks were registered in August.

**Conclusions.** The above mentioned shows that epidemiological surveillance of AEI must be improved by developing preventive measures, which would be based on incidence rates in each separate territory, finding the dominant transmission ways and factors, and strengthening the elective care of sanitary and epidemiological authorities for public food facilities and children pre-school institutions.

## **EPIDEMIOLOGICAL FEATURES AND WAYS OF IMPROVING PREVENTION OF ACUTE RESPIRATORY VIRAL INFECTIONS**

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**Introduction.** Acute respiratory viral infections for many years remain relevant problems of the health care system.

**Aim** - was to investigate of the epidemic process acute respiratory viral infections in Sumy region of Ukraine.

**Materials and methods.** For exploring the epidemic process of acute respiratory viral infections in 2005-2016 years we used information from the statistical reports of the Main Department of the State Sanitary and Epidemiological Service of Ukraine in Sumy region. To determination the population immunity to influenza we carried out hemagglutination inhibition reaction with various types of dry influenza diagnostics and examined the indicators of specific antibodies at titres of 1:40 and more in the donors blood.

**Results.** It was established that the incidence of influenza decreased from 784.7 per 100 thousand population to 33.7 ( $p < 0.05$ ). The incidence of influenza and acute respiratory viral infections among children is more than among adults ( $p < 0.05$ ). There is a strong tendency of reduction the frequency of detection of adenoviruses, RS-viruses and parainfluenza viruses in clinical material from patients with severe respiratory disease ( $p < 0.05$ ). The growth rate of detection the antigens of influenza virus was 8.2 %. The main feature of the epidemic season 2009-2010 is a beginning of circulation the new pandemic strain of influenza A (H1N1) California. With consistently high level of herd immunity to influenza B virus (99.8 %), in the donors' serum were found the antibodies to influenza A(H1N1) virus in the diagnostic titres in 76.9 % of cases and to the influenza A (H3N2) virus in 95.1 %, which indirectly indicates the wide spread of these viruses in Sumy region.

**Conclusions.** Using medicines and methods that promote the normalization of the immune system and increase non-specific resistance to infectious agents, timely application of the sanitary and anti-epidemic measures in the focus of infection, should be a key components in combating the emergence and spread of influenza and other acute respiratory viral infections.

## **CLINICAL AND EPIDEMIOLOGICAL FEATURES OF INFECTIOUS MONONUCLEOSIS IN THE NORTH-EASTERN REGION OF UKRAINE**

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**Introduction.** Infectious mononucleosis caused by Human gammaherpes virus 4 occur frequently in our everyday life. First of all, it is connected with the high circulation prevalence of Epstein-Barr virus (EBV) among planet's population, which reaches 80-100%, disease pluricausality, infection ease, polymorphism of clinical implications, frequency development of complications, high

level of infant mortality (up to 15,8%), absence of specific prevention medications and casual treatment, capability of virus to persist for a long time in human organism, tendency to the palindromic and chronicity of disease.

**Aim** - study and research clinic-epidemiological features of infectious mononucleosis clinical course in the north-eastern region of Ukraine.

**Materials and methods.** There were 122 infectious mononucleosis cases, which were hospitalized in 2012-2014 in the Sumy regional infectious clinical hospital n. a. Z. Y. Krasovytskyi. The diagnosis “infectious mononucleosis” was made on the grounds of epidemiological and clinical data, results of additional laboratory and instrumental examination techniques according to the common criterions clinical practice.

**Results.** The distribution by gender: women - 66 (54.1%) men - 56 (45.9%) of which 85 patients were hospitalized between the ages of 18 and 39 (69.7%), 33 patients (27%) - from 40 to 60 years, and 4 patients (3.3%) - aged 60. Among hospitalized patients urban population prevailed at 75.4% (92 persons), while the rural population occupied only 24.6% (30 people). The vast majority of IM patients was an indication of contact with such infectious patients - 103 of the all 122 patients (84.4%), while concerning the last 19 patients (15.6%) is unknown. The disease often had intermedium severity in 90 (73.8%) IM patients. It was light course in 30 patients (24.6%), and severe course was observed in only 2 patients (1.6%).

**Conclusion.** Incidence for infectious mononucleosis in the North-Eastern region of Ukraine is high and has increasing tendency and often affects children and young people.

## RELEVANCE OF SICKLE CELL ANAEMIA AND ITS PROTECTION AGAINST MALARIA IN AFRICAN CHILDREN

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**Introduction.** Sickle cell anaemia, an autosomal recessive disease caused by a single point mutation in nucleobase sequence of chromosome 11 with substitution of glutamic acid by valine and formation of HbS. Malaria on the other hand is an infection caused by a parasite (*Plasmodium* sp) that is transmitted to humans by female anopheles mosquito and is prevalent in tropical and subtropical regions of Africa due to increased rainfall, constant high temperatures and high humidity.

**Aim** - to understand the peculiarities of Sickle cell anaemia in children with Malaria in Africa.

**Materials and methods.** About 356 articles and epidemiological studies have been studied including a research that was carried out in a village (Orlu) in Nigeria over two years and included 621 children—450 of whom were positive for *P. falciparum* at the beginning of the study and 171 were negative.

**Results.** From the study, of the 450 children positive for *P. falciparum*, 300 were heterozygous for sickle cell gene (AS) while 150 were homozygous (SS). Of the heterozygous children, only 75 contracted severe clinical form of malaria while 225 endured mild and moderate clinical forms. Of the homozygous children, 110 contracted severe clinical forms of malaria with death occurring in 60 of them while 25 children endured moderate forms which were managed with aggressive therapies. Translocation of Sickle cell Erythrocyte MicroRNA into *Plasmodium falciparum* inhibits parasite translocation and contributes to Malaria resistance as individuals with three microRNAs ( miR-223, miR-451, let-7i) that are effective in reducing *P.falciparum* growth and replication and the later two are increased in HbAS and HbSS than in HbAA individuals, giving HbSS and HbAS individuals genetic advantage.

**Conclusion.** From the above research, though it's still under further investigations, it can be deduced that HbAA individuals with SS gene are at a higher risk of being predisposed to severe forms of malaria as compared to HbAS and Hb SS individuals with AS gene. So sickle cell anemia confers a protection against high susceptibility to malaria in children with AS gene.