

efforts need to be done to receive appropriate information on time, maybe to establish also sentinel active surveillance systems to detect serious adverse events

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High prevalence of serotype 3 in pneumococcal isolates causing complicated pneumonia and empyema in Portugal (2010–2015)

C. Silva-Costa, S. Aguiar, M. Pinho, A. Friães, M. Ramirez, J. Melo-Cristino*

The Portuguese Group For The Study Of Streptococcal Infections, The Portuguese Study Group Of Invasive Pneumococcal Disease Of The Paediatric Infectious Disease Society; Faculdade de Medicina, Universidade de Lisboa, Instituto de Microbiologia, Lisbon/PT

Purpose: In spite of the use of pneumococcal conjugate vaccines (PCVs), there are some reports of increasing incidence of complicated pneumonia, accompanied by significant pleural effusion or empyema, caused by *Streptococcus pneumoniae*. Some serotypes seem to be more frequently associated to this clinical presentation, such as serotypes 1, 3, 5, 7F and 19A. We aimed to characterize the pneumococcal population causing complicated pneumonia and to evaluate the role of molecular techniques in the enhanced detection of this important pathogen in pleural fluid samples.

Methods & Materials: Pleural effusion or empyema samples from pediatric patients, recovered in Portugal between 2010 and 2015 were included. When traditional culture methods revealed *S. pneumoniae* these were serotyped. In culture negative cases, samples were analyzed by conventional and RT-PCR for *S. pneumoniae* detection and serotyping.

Results: 109 out of 152 cases of complicated pneumonia were confirmed to be due to *S. pneumoniae*. The majority of cases (n=92) were diagnosed by molecular methods. The most frequent serotypes were serotypes 3, 1 and 19A together accounting for 62% (n=68) of the isolates. Some of the patients included in this study had infections due to vaccinal serotypes, in spite of being age appropriately vaccinated.

Conclusion: The high prevalence of the additional serotypes included in PCV13 is probably due to a higher propensity of these serotypes to cause complicated pneumonia, although the longtime use of PCV7 may have contributed to the decline of PCV7 serotypes. The persistence of some PCV13 serotypes in spite of vaccination is of concern. Ongoing surveillance studies are essential to understand the dynamics of the pneumococcal population after the inclusion of PCV13 in the National Immunization plan in Portugal.

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Clinical characterizations of children with bacterial meningitis (BM) in the Republic of Kazakhstan

A. Seidullayeva^{a,*}, G. Zhaxylykova^b, S. Kenzhebayeva^c, B. Turdalina^a, G. Volkova^d, G. Nurtazina^c, T. Kostrovskaya^c, D. Greenberg^e, A. Kushugulova^f, D. Bayesheva^g

^a JSC Astana Medical university, medicine, Astana/KZ

^b JSC Astana Medical university, prorector of studying, Astana/KZ

^c Municipal Children's Infectious Hospital, Astana, children infection, Astana/KZ

^d Municipal Children's Infectious Hospital, Astana, bacterial laboratory, Astana/KZ

^e The Pediatric Infectious Disease Unit Ben-Gurion University of the Negev Soroka University, Medical Center, Beer-Sheva/IL

^f National Laboratory Astana Nazarbayev University, head of Human Microbiome lab, Astana/KZ

^g JSC Astana Medical university, head of children infections, Astana/KZ

Purpose: Bacterial meningitis (BM) is characterized by severe clinical manifestations, and significant rate of residual effects. It is continue to be a common cause of morbidity and mortality worldwide In Kazakhstan, according to statistics Consumer Protection Committee (CPC) BM recorded in all regions of the country but this epidemiological data was never been analyzed linked with clinical information.

Study's aim: To determine morbidity characteristics of BM in children <14 years in various regions of Kazakhstan during 2014–2015.

Methods & Materials: Data obtained from CPC of Kazakhstan for BM was analyze for the country and by region in children <14 years. The introduction of Hib vaccine in 2008 into the national vaccination schedule and during 2010 - 2015 the 13-valent pneumococcal conjugated vaccine (PCV13) was gradually introduced in the country. Applying the methods of modern biomedical statistics: Analysis of extensive performance analysis and intensive indicators. Statistical analysis was performed using Statistics 9.0.

Results: N. meningitidis was the most common bacteria, 70% of all cases, followed by pneumococcus, 10–15%. The highest incidence of BM in 2015, determined in Almaty 24.81%, in Astana 24.05%, but in comparison with the year 2014 these figures decreased to half. In the other regions of the country incidence rates, of disease was absent in 2014, Akmola (0.6%), West Kazakhstan (0.67%), Kyzylorda (1.27%), Mangystau (0.52%), and North Kazakhstan (1.73%). During 2015 a significant increase of incidence of BM was observed compared to 2014 year in Almaty region, from 0.75% to 6.18%.

Conclusion: In the Kazakhstan Republic among children <14 year in 2015 compared to the year 2014 established decrease of BM from 5.52% to 4.49% for 100,000 population, while in other regions there is a consistent trend of increased morbidity.

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