Virological surveillance of influenza in the five recent post-pandemic seasons (2010/11 to 2014/15) in Bulgaria

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Introduction: Influenza virological surveillance is an essential tool for studying influenza virus evolution and for annual updating of the vaccine composition, as well. The aim of the present study is to analyze influenza virus circulation in Bulgaria during the five recent post-pandemic seasons.

Methods: A total of 4253 respiratory samples from patients with influenza like illness (ILI) or acute respiratory illness (ARI) were tested for influenza viruses using Real Time RT-PCR.

Results: Influenza viruses were detected in 1490 (35%) samples. Among the samples, 1049 (70%) were type A and 441 (30%) type B influenza virus. Among the subtyped A viruses, 556 (55%) were A (H1N1) pdm09 and 464 (45%) were A (H3N2). Co-circulation of all seasonal influenza types/subtypes had been registered during each season, with the exception of A (H1N1) pdm09 virus in 2011/12 season. In the present study data gathered from the antigenic and genetic analysis of influenza viruses, their antiviral susceptibility, the epidemiological and clinical characteristics of the infections caused, are presented.

Conclusions: Yearly variations in the distribution and frequency of influenza types/subtypes and annual shift of predominant type/subtype were observed. In the seasons with predominant spread of A (H1N1) pdm09 virus – 2010/11 and 2013/14, a greater number of influenza-related pneumonia cases, ICU admissions and fatal cases was registered (p<0.05). The results of the present study confirm the need for continuous and comprehensive influenza surveillance.

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