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BRIEF COMMUNICATION

OCCURRENCE OF INFLUENZA B/HONG KONG-LIKE STRAINS IN BRAZIL, DURING 2002

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SUMMARY

Through the influenza virus surveillance from January to October 2002, influenza B/Hong Kong–like strains circulating in the Southeast and Centre East regions of Brazil have been demonstrated. This strain is a variant from B/Victoria/02/88 whose since 1991 and until recently have been isolated relatively infrequently and have been limited to South–Eastern Asia. A total of 510 respiratory secretions were collected from patients 0 to 60 years of age, with acute respiratory illness, living in the Southeast and Centre East regions of Brazil, of which 86 (17.13%) were positive for influenza virus. Among them 12 (13.95%) were characterized as B/Hong Kong/330/2001; 3 (3.49%) as B/Hong Kong/1351/2002 a variant from B/Hong Kong/330/2001; 1 (1.16%) as B/Sichuan/379/99; 1 (1.16%) as B/Shizuoka/5/2001, until now. The percentages of cases notified during the surveillance period were 34.88%, 15.12%, 15.12%, 4.65%, 15.12%, 13.95%, in the age groups of 0-4, 5-10, 11-15, 16-20, 21-30, 31-50, respectively. The highest proportion of isolates was observed among children younger than 4 years but serious morbidity and mortality has not been observed among people older than 65 years, although B influenza virus component for vaccination campaign 2002 was B/Sichuan/379/99 strain. This was probably due to the elderly protection acquired against B/Victoria/02/88. In addition, in influenza A/Panama/2007/99-like (H3N2) strains 22 (25.58%) were also detected, but influenza A(H1N1) has not been detected yet.

KEYWORDS: Influenza virus; Isolation; Identification; Influenza surveillance network; Influenza vaccine.

During influenza virus season 2002 respiratory secretion from children presenting acute respiratory illness were sent to Respiratory Virus Laboratory of Adolfo Lutz Institute. Most part of them was due to influenza B virus infection.

Two antigenically and genetically distinct groups of influenza B viruses, represented by the B/Victoria/2/87 and B/Yamagata/16/88 reference strains, have been co-circulating world wide since the mid-1980s[4]. Since 1991 and until recently, B/Victoria/2/87 viruses have been limited to South-Eastern Asia. In May-June 2001 a number of B/Victoria-lineage viruses were observed in Hawaii, their first occurrence outside Asia in a decade[1]. During the 2001-2002 influenza season, however, B/Victoria/2/87-like viruses have spread beyond South-Eastern Asia and were detected in China, Canada, Hong Kong SAR of China, India, Italy, Japan, The Netherlands, Oman, Singapore, Taiwan province of China, Thailand and the USA.

The first influenza B/Hong Kong/330/2001 virus characterized in São Paulo came from a 14 year-old patient presenting with fever, headache, myalgia, nausea and vomiting[5]. Virus isolated from cell culture was identified by immunofluorescence with monoclonal antibodies of the respiratory Panel 1 Viral Screening & Identification Kit, (Chemicon International Inc., Temecula, CA). Following the subtype characterization by the hemagglutination inhibition test using antisera provided by the World Health Organization (WHO). Isolated viruses were sent to the Influenza Branch at the Centers for Disease Control and Prevention – Atlanta, GA, for further antigenic and genetic analysis [2,3].

By the National Influenza Surveillance Network sponsored by the Ministry of Health of Brazil this virus strain was identified in the South, Southeast, Centre East and North region of Brazil.

The high number of children infected and the observation of elderly protection against these viruses was due to the circulation of B/Victoria/2/87 strain worldwide (including both Americas) until 1990 or 1991. Now a variant from this virus return back to many countries out of Asia. Consequently, children 10 years old or younger never had a chance to meet these viruses and do not have antibodies against them, while old people have met these viruses in late 1980s. That is why severity of B/Hong Kong/330/2001-like infections among children (especially young children) may be higher than adults or elderly.

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WHO recommended to include B/Hong Kong/330/2001-like viruses into influenza vaccines for Northern Hemisphere for the influenza virus season 2002-2203[6]; and for the Southern Hemisphere to be used during influenza virus season 2003 based on influenza virus surveillance 2002[7].

In conclusion, influenza virus surveillance 2002 results brought out how important is the constant follow up surveillance of a virus undergoing the high capacity of mutation as influenza viruses. In addition to the preventive strategy by vaccination campaigns surveillance provides the basis for understanding the complexity of the immune response towards influenza virus infections.

RESUMO

Ocorrência do vírus da influenza similar à estirpe B/Hong Kong no Brasil, durante 2002

A vigilância do vírus da influenza, no periodo de janeiro a outubro de 2002, detectou a circulação da estirpe B/Hong Kong/330/2001 nas regiões Sudeste e Centro Oeste do país. Esta estirpe é uma variante do vírus da influenza B/Victoria/02/88 a qual teve sua circulação circunscrita no continente asiático por volta de 1991. Variantes da estirpe B/Hong Kong/330/2001 (B/Hong Kong/1351/2002) e da estirpe B/Sichuan/379/99 (B/Shizuoka/5/2001) também foram detectadas. A porcentagem de vírus caracterizados durante a epidemia foi de 34,88%, 15,12%, 15,12%, 4,65%, 15,12%, 13,95%, nas faixas etárias de 0-4, 5-10, 11-15, 16-20, 21-30, 31-50, respectivamente. Observou-se maior incidência da doença entre os indivíduos menores de 4 anos. Atribuiu-se a ausência de notificação nos indivíduos maiores de 60 anos ao contato prévio, desta faixa etária, com o vírus na década de 80. No mesmo período, detectou-se a circulação do vírus da influenza A/Panamá/2007/99-like (H3N2), por outro lado evidenciou-se a ausência da circulação da estirpe A(H1N1) até a presente data.

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