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The epidemiological and virological characteristics of influenza in Tunisia: Season 2013-2014

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Introduction: The influenza is an acute viral infection transmitted by air. It's a highly contagious disease that can cause serious complications, especially among vulnerable people, it presents a major public health issue with a considerable socio-economic impact. This retrospective study is based on data from National surveillance unit of influenza; it relies on descriptive analysis of influenza surveillance data provided by the network of sentinel sites and national influenza centre (NIC).

Results & Discussion: Influenza surveillance in Tunisia has been in place since 1999 with the creation of network sentinel sites, but it has developed significantly on March 2014, with the implementation of electronic surveillance system. In Tunisia, clinical, epidemiological and virological surveillance of influenza began in week 40/2013 (1 October, 2013) and ended in week 18/2014 (30 April, 2014). During the period of study: 156493 cases ILI (Influenza-like illness) were collected from a total of 2196715 patients seen at sentinel sites, representing 7.1% of total patients. The influenza epidemic was spreading in the winter season 2013/2014 during six weeks from 17 December 2013 (2013 / S51) to 17 March 2014 (2014 / S11), it was the shortest of the five seasonal epidemics followed since 2009. The epidemic peak was observed during the week of 4 to 10 February 2014 (2014/S06), with an incidence rate of 9.5%. On the other hand, Influenza epidemic of 2013-2014 season was mild in intensity and started earlier than that of the previous year. These findings were also observed in Europe and in USA. Among the consultants for influenza-like illness (ILI), 283 severe cases (0.18%) were hospitalized; significantly lower proportion than the previous season (0.25%). The lethality of severe cases remained comparable to that observed in the previous three seasons (0.44%), these severe cases were mainly infected with A (H3N2) virus. All of the 24 governorates of Tunisia have been affected by the influenza and the incidence is higher in regions that are the most populated. Children 5 to 16 years are most affected. Epidemiological surveillance of influenza on the Tunisian territory has shown that the epidemic peak was recorded during the coldest weeks (S6), in fact there is an inverse trend of monthly average temperature and influenza incidence, this remarkable correlation shows that the rate of influenza incidence increased as the temperatures gradually decline. The hypothesis that the virus is favored by low temperatures and inhibited by higher temperatures is confirmed in our study. Influenza virus A(H3N2), A (H1N1) and type B circulated with an initial dominance of type A virus that was reversed in favor of the type B in the last of January. The seasonal distribution of three types of influenza viruses was: Virus A (H3N2) (11.7%), A (H1N1) (0.2%), Virus B (0.2%) and other viruses A non-typed (14.6%). The positivity rate for influenza was 12.1%.

Conclusion: The influenza epidemics 2013-2014 was particularly short, marked by the co-circulation of three influenza viruses, the impact of the epidemic in terms of ILI consultation and hospitalization was less important. Viruses know no borders, control and fight against the influenza requires a global vision of the dynamics of the disease in our country, as well as around the Mediterranean in the context of better contain any unusual events.

Biography

Ben Salah Afif received Doctorate in the year 1985 from Faculty of Medicine of Sousse (Tunisia). He worked as Assistant Professor in the field of Medicine/ Preventive Medicine, worked as Associate Professor in the field of Epidemiology and also completed his PhD in the year 2000 from Oxford University/ United Kingdom. He is the full Professor of Medicine/Epidemiology, Head of the Laboratory of Epidemiology, Pasteur Institute of Tunis He has published more than 25 papers in reputed journals.

Zorruga Mokhtar has completed medicine studies from El Manar University, Faculty of Medicine of Tunis. He has Doctoral thesis in Medicine on 5-07-2001, Master of Advanced Studies in Emergency in the Faculty of Medicine of Tunis in 2012, Master of Advanced Studies in Travel medicine in the Faculty of Medicine of Tunis in 2014, ALS (Advanced life support) certificate of European Resuscitation Council in March 2013. He is the coordinator of influenza program in Tunisia, in cooperation with US / CDC. He has published some papers in reputed journals, the last one in *EID* journal (emerging infectious disease) / CDC : "Family Cluster of Middle East Respiratory Syndrome Corona -virus Infections, Tunisia, 2013" on September 2014.

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