Brief Report

Clinical and laboratory characteristics of childhood pandemic 2009 H1N1 Influenza. *Experience from the western region of Saudi Arabia*

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In April 2009, the Centers for Disease Control and Prevention (CDC) in the United States identified the first 2 cases of human infection with the 2009 pandemic influenza A (H1N1) virus. Subsequently, the 2009 H1N1 virus spread rapidly throughout the world. In June 2009, the first case of pandemic influenza A (H1N1) virus was reported in Saudi Arabia. There are many reported cases worldwide with a small number of children. In Saudi Arabia, there are few reported studies and those including children are scanty. We aimed to describe a brief report on the pediatric age group, associated with 2009 influenza A (H1N1) at Medina Maternity and Children Hospital (the largest pediatric hospital in Saudi Arabia), Medina, Saudi Arabia.

We reviewed the medical records of 44 children aged 12 years old and below with H1N1-positive influenza between October 2009 and November 2010. The H1N1 diagnosis was confirmed from nasopharyngeal swabs using real-time reverse transcriptase polymerase chain reaction. In all cases, antiviral treatment was given. This study was approved by the ethics committee of the Medina Maternity and Children's Hospital.

We found more boys than girls with a ratio of 1.3:1 with no statistical significant difference. Most patients (68%) were less than 3 years old. We studied some possible risk factors for development of the disease, and we found no risk factor in 25% of patients. The remaining patients had one or more risk factors with neurological problems (22.7%), and congenital heart disease (13.6%) occupying the highest percentage (**Figure 1**). Cough, fever, sore throat, and crackles were present in more than 50% of patients. Clinical and radiological evidence of pneumonia was present in 16 patients, and positive blood culture for bacterial infection was evident in 3 patients only. All patients with positive blood culture were less than 2 years of age. All patients with pneumonia (36.4%) needed intensive care unit admission for a variable duration. Mortality occurred in 3 patients (6.8%) from all H1N1 patients. Cause of death was sepsis in one patient, and respiratory failure in 2 patients.

The ratio of males to females in H1N1 infection is different from one study to another. Some studies reported male predominance, while others reported the reverse. It seems that there is no gender difference in H1N1 infection, taking into account all published data. Approximately two-thirds of our admitted patients were

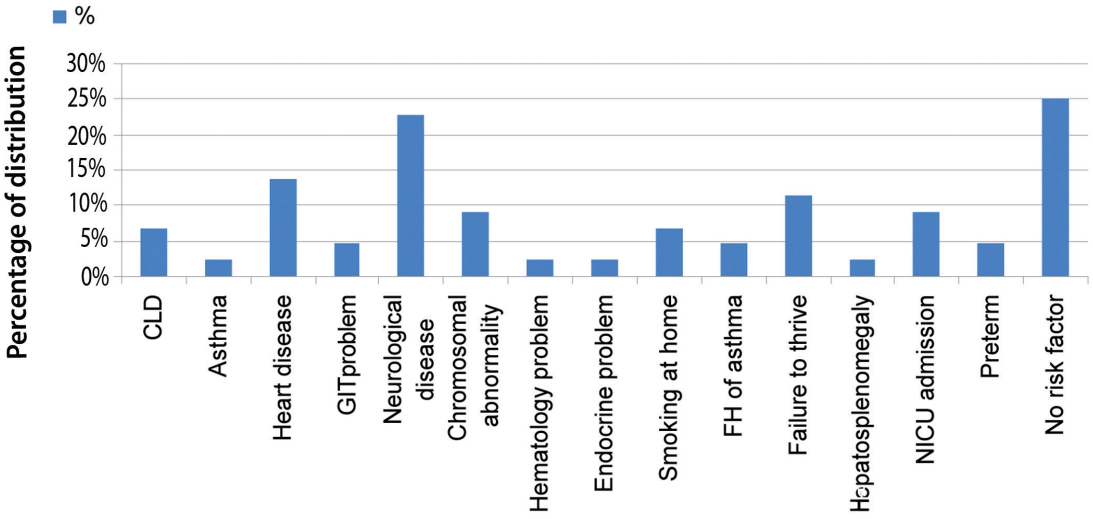

Figure 1 - Distribution of various risk factors among patients with H1N1 positive infection. CLD - chronic lung/liver disease, GIT - gastrointestinal tract, FH - family history, NICU - neonatal intensive care unit

3 years old or less. Risk factors for H1N1 infection had been studied in many previously published reports.[1,2] We found the presence of one or more risk factor in 75% of patients. The percentage is different from one study to another. In one study[1], risk factors were found in 60% of pediatric patients. Around 50-75% of patients with pandemic influenza H1N1 2009 viral infection had at least one risk factor at the time of admission.[1,2] The distribution of various risk factors is different in previous studies. We found that neurological diseases and heart diseases are the most common risk factors. Cancer, heart disease, asthma, and neurological diseases were the most common risk factors encountered in previous studies.[3,4] Cough, fever, sore throat, and crackles were present in more than half of our patients. Cough and fever were the most common presenting complaints of children and young people infected by the 2009 H1N1 influenza A virus. Cough, fever, and sore throat showed a high sensitivity in patients with the 2009 H1N1 influenza infection. Pneumonia is a reported complication in many patients with H1N1 infection. Approximately 10% of patients admitted with H1N1 infection developed bacterial pneumonia, and 16% of those with bacterial pneumonia were also positive for other viral infections.[5]

In conclusion, during Pandemic H1N1 infection in Western region of Saudi Arabia, 75% of affected children had at least one risk factor. More than one third of patients had pneumonia and required PICU admission and death happened in 6.8% of patients.

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