

Letter to the Editor

Myocarditis associated with 2009 influenza A (H1N1) virus in children

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Sir,

The very interesting articles reporting characteristics of hospitalised patients with 2009 influenza A (H1N1) encouraged us to write this commentary letter. In the main cohorts of 2009, H1N1 adult and paediatric patients published to date, no viral myocarditis has been reported.^{1–9} However, a large number of patients required intensive care unit admission and mechanical ventilation for acute respiratory distress. Most of them presented with arterial hypotension or shock requiring inotropic support or extracorporeal membrane oxygenation.³

We would like to share our experience in our paediatric intensive care unit, where three hospitalised children developed myocarditis during the epidemic wave in Reunion Island (Indian Ocean) from July, 2009 to October, 2009, epidemic peak – week 30 to 38. Myocarditis was fulminant in two

cases, presenting with an acute-onset heart failure and cardiogenic shock. Clinical characteristics of these three patients are summarised in Table 1. Influenza A (H1N1) was confirmed by specific reverse transcription – polymerase chain reaction on naso-pharyngeal swabs and by serologic analysis.

Data on the prevalence of myocarditis in children are limited and autopsy studies have shown that it often stayed undiagnosed. Myocarditis may be seen in severe forms of many infectious diseases.

Our report demonstrates that the 2009 Influenza A (H1N1) virus is cardiotropic and emphasises that a prompt cardiologic examination including a transthoracic echocardiography is warranted in H1N1-infected patients in case of acute respiratory distress or haemodynamic instability. If fulminant myocarditis is recognised and patients aggressively supported in a timely manner, full recovery can be obtained with a low

Table 1. Clinical characteristics of 2009 H1N1 myocarditis in paediatric patients, Reunion Island.

	Patient 1	Patient 2	Patient 3
Patients	9 years (male)	12 years (female)	7 months (female)
Comorbidity	Congenital subvalvular mild aortic stenosis	Severe cerebral palsy with recurrent pulmonary infections	None
Myocarditis presentation	Acute-onset heart failure and cardiogenic shock	Acute-onset heart failure and cardiogenic shock	Dilated cardiomyopathy without hemodynamic instability
Elevation of cardiac enzymes	Yes	Yes	Yes
LVEF	15%	35%	15%
Duration of inotropic support/ventilatory support (days)	15/10	5/30	5/0
During of antiviral therapy/hospitalisation in PICU (days)	10/17	15/30	5/7
Outcome	Full recovery	Full recovery	Severe persistent depressed LVEF (25%) after 2 months

LVEF = left ventricular ejection fraction, PICU = paediatric intensive care unit

mortality rate.¹⁰ We hope that sharing information in this field would be useful for the management of critically-ill H1N1-infected patients.

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