RESEARCH BRIEF

Clinical Profile of H1N1 Positive HIV- Infected Children

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We report five cases of HIV infected children, who presented with flu-like symptoms and were diagnosed to have H1N1 infection (swine origin influenza). Four of these children were admitted with respiratory distress and pneumonia and were managed in swine flu isolation ICU. Two children required nonivasive ventilatory support. All children recovered completely and at discharge were referred for initiation of ART.

Key words: *HIV, H1N1, Influenza.*

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To the best of our knowledge, there is no published data on HIV infected children with severe H1N1 infection (swine origin influenza 2009) [1-3]. There is no documented information on clinical interactions between HIV and influenza A (H1N1) virus. There is insufficient information on complications and spectrum of illness, although complications are likely to be similar to those of seasonal influenza. In previous seasonal influenza outbreaks, HIV-infected persons had more severe infections and increased hospitalization and mortality rates [4]. The symptoms might be prolonged and the risk of influenza-related complications higher for certain HIV infected people. We report five children managed at our centre who were HIV positive, not on ART, with H1N1 infection.

METHODS

Children who had influenza like illness (ILI) were admitted to an isolation ward or ICU depending on their clinical condition. HIV infection was suspected in those children who had failure to thrive, history of recurrent infections or those whose parents reported high risk behavior. Four children were diagnosed seropositive after admission for suspected H1N1. Three consecutive ELISA tests were used to diagnose HIV infection in children older than 18 months. In case of the 4 month old child, HIV DNA PCR was used to confirm HIV infection. H1N1 infection was confirmed by RT-PCR.

RESULTS

The age of children who were HIV and H1N1 positive ranged from 2 to 10 years. Severe hypoxemia was seen in two children which responded well to bubble CPAP. Chest *X*-ray showed unilateral or bilateral parahilar infiltrates, similar to those seen in children who were HIV negative but H1N1 positive. CD 4 counts and CD percentage (for children >5 and <5 years, respectively). in children who were HIV and H1N1 positive were in the range for which initiation of ART is recommended. Blood cultures were sterile in all children. All five children were discharged home on anti-retroviral therapy. Details are shown in ***Table* I.**

DISCUSSION

The presentation of children who had HIV infection and tested positive for HIV was similar to those who

TABLE I CLINICAL AND LABORATORY FEATURES, AND OUTCOME OF HIV POSITIVE CHILDREN WITH H1N1

Characteristic	Case 1	Case 2	Case 3	Case 4	Case 5
Age/sex	10 y/F	3 y/M	4 mo/M	7 y/F	2 y/M
CD4 count	253	112		270	
Symptom duration (d)					
Fever	10	4	3	5	8
Cough	10	4	8	5	8
Resp. distress	5	1	3	5	—
Parotid swelling	—	—	—	—	3
S_PO_2 (air)	96%	86%, 97%*	84%, 96%*	96%	97%
ABG	Normal	Normal*	Normal*	Normal	Normal
Treatment given (d)					
Bubble CPAP	—	3	4	—	—
O_2	3	5	2	2	—
Oseltamivir	10	5	5	5	5
Antibiotics	10	10	7	7	5
Cotrimoxazole	14	14	14	14	14

*S_PO_2: Oxygen saturation by pulse oximetry, ABG: Arterial blood gas, ART: Anti- retroviral therapy; *bubble CPAP.*

were HIV negative i.e. cough, cold and fever followed by respiratory distress (Unpublished data). Only one child presented with respiratory symptoms and parotid enlargement which could be attributed to either HIV infection itself or to H1N1 infection.

Children who were HIV positive with H1N1 were treated in the same way as the HIV negative, H1N1 positive patients (i.e. oseltamivir, broad spectrum antibiotics, bubble CPAP and oxygen). The mean hospital stay was also similar in these two groups i.e. 7 days (Unpublished data). All children tolerated oseltamivir well with no adverse effects. All patients were empirically given intravenous antibiotics and oral cotrimoxazole in view of the likely immunosuppressed status and possibility of serious bacterial and *P. jarivi* infection.

High index of suspicion and early treatment can reduce the rate of complications and mortality in these patients. HIV-infected persons should be considered as a high risk and a priority population for preventive and therapeutic strategies against influenza including emerging influenza A (H1N1) virus infection.

Persons with HIV infection should be considered for post-exposure prophylaxis with oseltamivir, prophylaxis being continued for 10 days after the last known exposure to an suspected or confirmed case [5]. Post-exposure prophylaxis is recommended for HIV-infected persons who are household contacts of individuals with influenza A (H1N1).

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