Atypical clinical presentation of H1N1 influenza in a dialysis patient

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In May, 2009, a 32-year-old man presented to our emergency department with dyspnoea, productive cough with limited haemoptysis, diffuse myalgia, and malaise. The symptoms had started 24 h earlier; he denied fever or chills. He had end-stage renal disease secondary to focal segmental glomerular sclerosis and had fluid overload because he had missed three of his last eight haemodialysis treatments. His vital signs were: blood pressure 162/94 mm Hg, respiratory rate 20 breaths per min, temperature 37.5°C, oxygen saturation 95% with supplemental oxygen. Physical examination showed signs of volume overload and bilateral coarse crackles in the lungs. Chest radiography at admission showed bilateral airspace opacification and vascular redistribution (figure).

He was treated with antibiotics and urgent haemodialysis, during which 6.1 L of fluid was removed. An additional 5.1 L were removed during a second dialysis treatment, but respiratory status did not improve; the patient was intubated and mechanically ventilated on day 4. Although afebrile, given the lack of improvement in clinical status, on day 4 of admission our patient was placed in respiratory isolation and a 5 day course of oseltamivir was started. Bronchoscopy showed no endobronchial lesions or alveolar haemorrhage. Bronchoalveolar samples were positive for influenza H1N1 virus by PCR. ICU admission was later complicated in haemodialysis patients. Worryingly, the diagnosis of influenza was not considered until our patient failed to respond to fluid removal and antibiotics. Haemodialysis patients are close to one another during their dialysis treatment, increasing their exposure to transmission of respiratory infection. Fortunately, to date no known cases have been directly linked to our case. The current recommendations for treatment of H1N1 influenza are oseltamivir or zanamivir. Because oseltamivir is eliminated by the kidneys, a reduced dose of 75 mg orally 3 times weekly after haemodialysis is recommended, although post-dialysis dosing of 30 mg daily has been shown to achieve adequate clinical exposure to the active form of the drug in haemodialysis patients. These results were obtained in patients dialysed on a low-flux dialyser, therefore this dose may be insufficient when high-flux dialyzers are used because of greater drug clearance. Because our centre uses only high-flux dialysers, we administered the increased dose of 75 mg daily for 5 days. H1N1 influenza A is an important differential diagnosis in dialysis patients who are short of breath or febrile. Our case highlights the potential impact of influenza in this vulnerable population.

Figure: Chest radiography
(A) Bilateral airspace opacification and vascular redistribution on admission. (B) After the second haemodialysis session, showing progression despite removal of 11.2 L of fluid.

References