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Primary varicella infection presenting in old age

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Abstract

We describe a case of varicella pneumonitis in an elderly Bangladeshi man. As seroconversion may occur at a later age in this population, early admission and the use of intravenous (i.v) aciclovir should be considered in all adult immigrants presenting with respiratory symptoms and a history of chickenpox exposure.

Case history

A 68yr old Bangladeshi man was admitted with a three-day history of difficulty in breathing and extensive vesicular rash. There was a longstanding history of COPD and the patient was completing a decreasing course of oral prednisolone. Two grandchildren living in the same house had developed chickenpox 5 days earlier. On examination he was pyrexial (temperature 39.3°C), tachypnoeic (respiratory rate 30 breaths/min) and covered in a vesicular rash affecting the limbs, trunk, face, mouth and conjunctiva. Arterial blood gases revealed type I respiratory failure (pH 7.36; pCO2 4.74 kPa; pO2 8.15 kPa; HCO3 19.8 mmol/l), chest X ray was unremarkable. The patient was treated with i.v aciclovir 10mg/kg 8 hourly, prednisolone 60 mg/day, bronchodilators and broad- spectrum antibiotics. Despite ventilatory support in the ITU the patient died 10 days later.

Diagnosis

A diagnosis of primary varicella zoster virus (VZV) infection was made. Vesicle scrapings and respiratory secretions examined by immunofluorescence (Dako, UK) were positive for VZV. Serological investigations (Dade Behring, USA) were positive for VZV IgM and negative for VZV IgG antibodies indicating primary infection.

Unusual features and Evidence-based Treatment

Infection with VZV leads to chickenpox, a common exanthama of childhood. VZV usually causes zoster in the elderly due to reactivation of latent virus. In temperate climates primary VZV occurs mainly in children and infection in the elderly is a very unusual event. The epidemiology may be changing with an increasing trend towards infection in early adulthood (1). Four deaths due to primary infection in adults (two over thirty years of age) were reported to the USA centres for disease control (CDC) in 1998 (2). Immigrants from the Asian subcontinent may be at increased risk of infection as seronegativity as high as 42% has been found amongst rural Bangladeshi adults (3). Infection at a later age is associated with an increased risk of developing varicella pneumonitis (4) and thus higher mortality (1,5) Smoking (6) and prior treatment with steroids (7) have been identified as independent risk factors. Treatment of established VZV pneumonitis is controversial, retrospective analysis of patients treated with aciclovir has shown some benefit (8,9) but there is no large randomized controlled trial to date. Likewise adjunctive use of steroids has shown reduction in ITU and hospital stay but not overall mortality (10). Varicella immune globulin (VZIG) has been used successfully to attenuate disease in non-immune contacts of primary cases whilst primary active immunization is employed in North America and Japan. Although VZIG may be effective even when given 7–10 days post exposure there is no evidence that VZIG is effective in treatment of established disease (11).

Lesson

Adult immigrants from the rural tropics i.e. Africa, South-east Asia and South America are at increased risk of primary varicella infection. Presentation with respiratory symptoms and history of a chickenpox contact should prompt rapid aciclovir therapy (10 mg/kg, 8 hourly). Seronegative immunocompromised adults who are in contact with a case should be offered prophylaxis with VZIG (1000 mg) to prevent or attenuate primary varicella infection.

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