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LETTER TO THE EDITOR

Fatal measles as AIDS presentation in Italy

C Colomba, L Saporito, C Gioè, F Tramuto, A Firenze and A Cascio
Department of Sciences for Health Promotion and Mother-Child Care, University of Palermo, Palermo, Italy

Dear Sir,

We read with interest the article by Dauby *et al.* which highlighted an approximately 5-fold increase compared with HIV-infected individuls born before 1970 in the risk of measles seronegativity in HIV-infected subjects born after 1970 [1].

In recent years, there has been a substantial increase in the number of measles cases reported in Italy, as in other European Union/European Economic Area (EU/EEA) countries, as a consequence of a reduction in vaccine coverage in children, with ongoing risk of community-wide transmission. From 1 January to 31 May 2018, 1258 measles cases and four measles-associated deaths were reported to the National Institute of Health in Italy. The median age for the cases was 25 years and 90% were not vaccinated at the time of infection [2].

Epidemic measles circulation represents a risk for immunodepressed subjects. It has been shown that coinfection with HIV and measles more than doubles the odds of death in children with measles. Clinical presentation of measles in HIV-infected adults is frequently atypical and the diagnosis is difficult. In the few cases described, all patients had known HIV infection at the time of measles diagnosis [3,4]. However, if HIV infection is unknown, the diagnosis of measles can be delayed.

Recently, a 29-year-old Sicilian man with unknown HIV infection who had not been vaccinated against measles was admitted to our Infectious Diseases Unit. He had no relevant medical history and had had a high fever (39.5°C), dysphagia, haematuria, cough and respiratory distress for 5 days.

Clinical findings on admission were a high pulse and respiratory rate, oral candidiasis, leukopaenia (3.4×10^9 cells/L) with lymphopaenia (0.6×10^9 cells/L), mild elevation of inflammatory markers, and bilateral diffuse interstitial infiltrates on chest radiography. Blood and urine cultures and serology for *Legionella* spp., *Mycoplasma pneumoniae* and *Chlamydia pneumoniae* were negative. Sputum samples were repeatedly negative for bacteria, mycobacteria and fungi. An interferon-gamma release assay test was negative. Empiric treatment with piperacillin/tazobactam and levofloxacin plus O_2 therapy was started.

When HIV infection was confirmed (CD4 cell count 130 cells/μL; HIV viral load 1 500 000 HIV-1 RNA copies/ml), antiretroviral therapy with dolutegravir and tenofovir/emtricitabine was started. Intravenous trimethoprim-sulfamethoxazole (TMP/SMX) was administered on the basis of hypothesized *Pneumocystis jirovecii* infection.

On day 4, rare maculopapular elements appeared in the upper part of the chest, and high fever and haematuria persisted. An allergic reaction was suspected and TMP/SMX was discontinued. Respiratory distress worsened; chest radiography revealed the progression of bilateral diffuse interstitial and alveolar infiltrates. Serology for measles was performed and the sample tested positive for specific immunoglobulin M (IgM) and negative for immunoglobulin G (IgG) antibodies. Measles virus was detected by polymerase chain reaction in the patient's saliva, urine and blood.

On day 5, because of severe respiratory failure, the patient was transferred to the intensive care unit, and mechanical ventilation was started. Cytology of Bronchoalveolar Lavage samples showed an acute inflammatory response with atypical epithelial cells, supporting a diagnosis of viral infection. His respiratory condition did not improve, and after 3 days the patient died. His parents declined an autopsy.

This case is a further demonstration that measles can be fatal in adult HIV-infected late-presenter patients. Not being aware of the severe state of immunodepression linked to HIV infection made the diagnosis of atypical measles more difficult; the appearance of exanthema after the administration of TMP/SMX led us into the error of thinking that it was an allergic reaction to the antibiotic.

We underscore the need for physicians to consider the diagnosis of measles in HIV-infected patients with respiratory distress during measles outbreaks. Screening for

Correspondence: Dr Claudia Colomba, Dipartimento di Scienze per la Promozione della Salute e Materno-infantile "G. D'Alessandro", Università di Palermo, Via del Vespro, 129, 90127 Palermo, Italy. Tel: +39 91 6553626; fax: +39 91 591440; e-mail: claudia.colomba@unipa.it

vaccine-preventable diseases is recommended for all HIV-infected patients and vaccination should be offered to susceptible patients, with the exception of those with high-level immunosuppression [5].

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