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Empiric trimethoprim/sulfamethoxazole treatment of suspected *Pneumocystis jiroveci* pneumonia in patients with hematological malignancies

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Abstract

Background: The inclusion of trimethoprim/sulfamethoxazole (TMP/SMX) in the standard empirical treatment of neutropenic fever is a potential option to decrease mortality from infection caused by *Pneumocystis jiroveci* in patients receiving conventional chemotherapy for hematological malignancies.

Purpose: To demonstrate the importance of TMP/SMX inclusion in the empirical treatment of patients with typical PCP features, despite negative Pneumocystis carinii (PC) antigens.

Materials and methods: Four pts (3 pts with NHL and 1 with ALL) with a median age of 29 (22–47) years were included in this study. All of them were in a period of immunosuppression due to chemotherapy. The diagnosis of pneumocystic infection was based on clinical signs and compared with antigen detection in bronchoalveolar lavage (BAL) or sputum.

Results: In all 4 pts clinical and laboratory PCP-like features were observed: prolonged dry cough, prolonged subfebrile hyperthermia, slow shortness of breathing increasing, respiratory alkalosis, hypoxemia and hypocapnia, LDH increase, and X-ray manifestation prior to physical signs. Empirical antibacterial and antifungal treatment was ineffective. The PC-antigen was negative in all cases. The appearance of clinical and laboratory symptoms previously described was estimated as suspicious for *P.jiroveci* infection and all patients were treated with TMP/SMX (15 mg/kg of trimethoprim) alone or in combination with voriconazole. All four subjects experienced transient worsening of pulmonary insufficiency and stabilization of the roentgenological changes. After three days of the TMP/SMX course a tendency to both ventilation function and X-ray improvement was observed. After 20 days complete clinical, laboratory and X-ray recovery was demonstrated.

Discussion: The detection of the PC-antigen in bronchoalveolar lavage or induced sputum is a sensitive method of *P.jiroveci* infection diagnostics. Nevertheless, typical clinical and laboratory features insist on the use of TMP/SMX in the empirical therapy despite PC-antigen test negativity.

Keywords: pneumocystis pneumonia, empirical treatment