Features of infusion chemotherapy with first-line drugs in patients with tuberculous meningitis and HIV

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Objective. To investigate the effectiveness of first-line intravenous drugs (isoniazid and ethambutol) in patients with tuberculous meningitis and HIV during the intensive phase of chemotherapy.

Materials and methods. 54 patients with newly diagnosed infiltrative pulmonary tuberculosis, tuberculous meningitis, and HIV were included in this study. The presence of Mycobacterium tuberculosis in sputum was observed in all patients. Group 1 consisted of 23 patients receiving ethambutol and isoniazid intravenously, and rifampicin and pyrazinamide were administered orally. Group 2 consisted of 31 patients treated with first-line oral anti-tuberculosis drugs. Serum isoniazid and ethambutol concentrations were determined by chromatographic method.

Results. There was a greater improvement in clinical symptoms and radiographic evidence in patients receiving intravenous isoniazid and ethambutol compared with group 2. Positivity of sputum Mycobacterium tuberculosis was observed during the second month of treatment in 25.0% of patients in group 1 and 76.1% of patients in group 2 (p=0.003). In addition, 9 (39.1%) patients died before 6 months when isoniazid and ethambutol were administered intravenously compared with 22 (70.9%) in group 2 (p=0.023).
Conclusions. In tuberculous meningitis and HIV, intravenous treatment with isoniazid and ethambutol was more effective than oral treatment for 2 months of intensive treatment in the form of faster sputum conversion, clinical improvement, and higher mean concentrations of isoniazid and ethambutol blood. In addition, mortality was lower with intravenous isoniazid and ethambutol compared with oral treatment.

Key words: tuberculosis, tuberculous meningitis, HIV, drug concentration, ethambutol, isoniazid.