

**THE APPLICABILITY OF THE INTRAVENOUS
ANTI-TUBERCULOSIS DRUGS IN PATIENTS
WITH MULTIDRUG RESISTANT TUBERCULOSIS
IN SHORT REGIMEN OF CHEMOTHERAPY**

**N. A. Lytvynenko, H. O. Varytska, M. I. Gumenyuk,
M. V. Pogrebna, Yu. O. Senko**

Abstract

Aim — to evaluate the applicability of the intravenous anti-tuberculosis (anti-TB) drugs in patients with multi-resistant tuberculosis (MDR-TB) in short chemotherapy regimen, determining a cost-effectiveness of the regimen.

Materials and methods. In a randomized controlled open case-control clinical trial we studied the effectiveness of short regimen of sequential anti-TD chemotherapy (intravenous use — until sputum smear conversion, after smear conversion — switch to oral drugs). 60 patients with new MDR-TB cases who received chemotherapy regimens with 7 anti-TB drugs (3 — with bactericidal effect: fluoroquinolone, aminoglycoside, linezolid) were enrolled. Patients were divided into 2 groups. Main group — 30 patients on parenteral levofloxacin, PAS and linezolid until sputum smear conversion with further switch on oral forms; reduced to five months intensive phase. The control group — 30 patients on same medications taken orally for 8 month.

Results. In main group “effective treatment” (cure and treatment completed) was achieved in 76.6 % patients versus in 60.0 % patients from control group ($p < 0.05$). Time to sputum conversion in main group was $39 \pm 1,8$ days versus $81 \pm 4,2$ days in the control group ($p < 0.05$). The frequency of adverse reactions was the same in both groups: 14 (46.6 %) vs 12 (40.0 %). The total cost of chemotherapy regimens per one patient in main and control groups was UAH 159275.7 and 149031.9 UAH., respectively, but the cost-effectiveness of chemotherapy regimen in control group was 1.1 time lower.

Conclusions. The use of parenteral drugs in short chemotherapy regimen comparing with conventional oral therapy increased the effectiveness of treatment of patients with new MDR-TB cases from 60.0 % to 76.7 %.

Early start of sequential chemotherapy (due to implementation of GeneXpert diagnostic tool in all patients) shortened the term of sputum conversion from ($39 \pm 1,8$) days to ($81 \pm 4,2$) days and two-fold reduced the duration of hospital stay and eventually reduced the overall cost of treatment.

Key words: multidrug-resistant tuberculosis, short regimen, effective treatment, parenteral anti-tuberculosis drugs.

Ukr. Pulmonol. J. 2016; 4:19–23.

Nataliia A. Lytvynenko

National Institute of phthysiology and pulmonology

named by F. G. Yanovskii NAMS of Ukraine

Drug-resistant tuberculosis department

Senior research assistant, PhD

10, M. Amosova str., 03680, Kyiv, Ukraine

Tel.: 38 (044) 275-41-33, dr.n.lytvynenko@gmail.com