USE OF ETHAMBUTOL SOLUTION FOR INTRAVENOUS ADMINISTRATION (INBUTOL) IN A COMPLEX TREATMENT OF MULTI-DRUG-RESISTANT TUBERCULOSIS. CLINICAL CASES

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Summary. The article contains data on two clinical cases of multi-drug-resistant pulmonary tuberculosis in which the addition of ethambutol solution for intravenous administration to the polychemotherapy regimen has considerably improved the result of treatment and has made the patients recovery process faster. A conclusion about expediency of the ethambutol solution for intravenous injection inclusion in tuberculosis chemotherapy regimen has made.

Key words: MDR lung tuberculosis, chemotherapy, ethambutol

Resistant forms of TB, especially multi-drug-resistant (MDR) TB are the significant and essential medical and social problem today.

Treatment of patients with resistant TB differ from the treatment of patients infected by mycobacterium tuberculosis (MTB) sensitive to anti-TB drugs in chemotherapy regimen and drugs used, duration of therapy, high frequency of undesirable side effects that together lead to a significant increase in the cost of therapy.

We included in the scheme of treatment of resistant and multi-resistant tuberculosis ethambutol solution for intravenous administration (Inbutol, "Yuria-Pharm", Ukraine) which, unlike the tablet form of ethambutol, has 100% bioavailability (the bioavailability of ethambutol in tablets is about 75%), which enables the using of a lower dose with a lower risk of side effects and increased effectiveness against the MBT by the rapid creation of necessary therapeutic concentrations in tuberculosis foci. Taking into the account that the primary resistance of MBT to ethambutol today is low (less than 6%) and secondary one develops slowly, ethambutol is included in many regimens of anti-TB therapy, including treatment of patients with resistant forms of TB.

Below two observations of Inbutol use in the treatment of TB patients are described.

Patient A, 21, pulmonary tuberculosis from March 2008. She started treatment at home, but due to the lack of sensitivity of MBT to the HRS (Isoniazid, Rifampicin, Streptomycin) and the absence of positive radiographic changes during treatment 05/19/2008 she was transferred to Sumy Oblast TB Dispensary with a diagnosis: newly diagnosed TB (NDTB) (03/07/08) of the upper lobe of the left lung (infiltrative). Destruction (+), MBT(+), M(+) (MBT detected in the sputum smear), K(+) (positive sputum culture), Resist I+ (HRS), Resist II+ (Rb - Rifabutin), Hist. 0 (histological exam not performed), category IV, cohort 1 (2008). Profuse pulmonary bleeding occurred on 08/04/08 and 08/07/08 surgery - resection of C1-1c of the upper lobe of left lung and apical segment of the lower lobe was performed. Patient was discharged from hospital 12/19/2008 in satisfactory condition.

In May of 2009 the patient had hemoptysis and 05/27/2009 she was hospitalized again in the department of lung surgery of Sumy Region TB Dispensary. On plain film of the chest from 5/26/09 (Fig. 1.) and the tomogram of the left lung from 06/10/09 (Fig. 2) it was defined: left side - condition after surgery, dissemination of TB foci of different size and intensity throughout all left lung, in the upper lung field cavity 1.5x1.5 cm.

Following treatment was administered: Amikacin (A), protamine (Pt), pyrazinamide (Z), ofloxacin (Ofl), haemostatic and detoxification therapy. 06/16/2009 Inbutol (E) for intravenous administration at a dose of 1000 mg/10 ml was added to the therapy described above. Drug has been administered for 1 month in combination with the other drugs. After completing a 1-month course of Inbutol control X-ray examination (Fig. 3 and 4) showed the next changes: deformation of the pulmonary pattern in the upper lobes, pneumofibrosis, small dense foci; no destructive changes, root of the left lung is deformed and displaced upward.

Patient was discharged in satisfactory condition with a recommendation to continue treatment at home.

The patient Ya., 33 yo. She was hospitalized in the department of lung surgery of Sumy Oblast TB Dispensary from 09.09.2009 till 12.23.2009.

Diagnosis: NDTB (09/09/09) of the left lung (infiltrative), Destr. +, MBT +, M-, K+, Resist. I (S-streptomycin), resist. II -, Hist. 0, Cat., Cog. 3 (2009).

Patient received following treatment: kanamycin (K), isoniazid (H), pyrazinamide (Z), rifampicin (R), detoxification and symptomatic therapy.
Due to the absence of positive X-ray dynamics after a two-month course of treatment regimen Inbutol at a dose of 1000 mg/10 ml for intravenous infusion (30 infusions simultaneously with intra-organ electrophoresis) was included to the treatment.

After completing treatment course symptoms of intoxication have decreased significantly, body temperature has become normal; body weight has increased by 3 kg.

According to X-ray examination made before (Fig. 5) and after (Fig. 6) treatment with Inbutol significant resorption of focal infiltrative changes was
observed as well as absence of destruction (also proved by tomogram).

Patient was discharged in satisfactory condition with a recommendation to continue treatment at home.

We currently have seven observations of Inbutol use in chemotherapy for patients with drug-resistant pulmonary tuberculosis. Despite the small number of observations in all cases we noted the positive dynamics of clinical and radiological changes. Side effects of drug use were not detected.

We consider it is appropriate to include ethambutol solution for intravenous administration (Inbutol) at a dose of 1000 mg/10 ml administered 1 time per day to a chemotherapy regimen for patients with resistant and multi-drug resistant forms of tuberculosis.