Choporova O.I., Vijayan S.P.

Infrared laser emission at the liver failure compliance of the patients with multidrug and rifampicin-resistant pulmonary tuberculosis

Kharkiv national medical university, Kharkiv, Ukraine

Objective. Daily application of polychemotherapy (PHT) to multidrug and rifampicin-resistant pulmonary tuberculosis (MDR TB, RR TB) patients worsens function of liver, cause of adverse reactions (AR), while standard liver protectors have insufficient effect.Our goal was to study usage of infrared laser emission (L) («MILTA-01», Moscow, Russia) with L-arginine L-glutamate (G), made by "Zdorovie"[Kharkiv, Ukraine].

Materials and Methods: There were 77 patients suffering with MDR TB and RR TB. It was 2 groups of patients as follows: I group (39 patients)-[PHT+G+L], II group (38 patients) – PHT-control group were equal as far as age, gender, specific inflammation spreadness, intoxication signs were concerned. Liver blood stream and portal system evaluation was carried out by doppler ultrasound (DUS). Before and after the treatment defined the changes of intrahepatic hemodynamic, the level of the albumin-globulin coefficient, the level of Diene conjugates (DC), Malondialdehyde (MDA) of blood serum; estimated frequency and character of AR.

Results: The main reasons in the worsening of the liver function in MDR TB, RR TB cases are:

1) increase in MDA content, which correlates with signs of increased TB activity i.e. the prevalence, the presence of lung decay, bacterial excretion, erythrocyte sedimentation rate ($r = 0.25$ and $r = 0.44$; $p<0.05$) before beginning of the treatment; The level of DC, MMP before treatment had less significant connection with TB activity. MMP level doesn't exceed twice its normal level. 2) progression of the liver failure depends on its function at 1 month of the CT (from $r = - 0.27$ to $r = - 0.23$). According to DUS, two types of intrahepatic disorders was revealed, that coincide with TB activity, increased levels of MDA and MMP and reduced efficacy of PHT. Hypoki-

netic dystonia of the liver vessels (DLV) reduces the efficacy of PHT almost by 2 times ($p<0.05$). The negative impact of hyperkinetic DLV on restoration of lung parenchyma is because of the reduction of the synthetic ability of hepatocytes due to ischemia and hypoxia. It is established the laser-induced vasodilatation earlier constricted microvessels and significant restoration of an intrahepatic bloodstream at propensity to the hypotonia of vessels of small and average calibre ($p <0,01$). CHT+G+L therapy promoted statistically authentic increase of level of the albumin-globulin coefficient. It is established, that on a background of application L and G AR arose in 1.64 times less often, than in II group. From AR are noted: toxic reactions at 8 patients (20.5 %) I groups and 13 (34.2 %) II groups, toxic-allergic reactions at 2 (5.12 %) and 5 (13.15 %), allergic - at 5 (12.8 %) and 10 (26.3 %) accordingly.

Conclusion: The changes of IH of the patients with MDR TB, RR TB are caused by endogenous intoxication and expression of oxidative stress markers which entail decelerate of reparative processes of the lung parenchyma, hence adversely affecting PHT. In order to improve the effectiveness of TB treatment individualized approach of accompanied pathogenic treatment should be prescribed. It has been shown that combined therapy by [G+L+CHT]-1) promotes restoration of a bloodstream and delivery of the medicines directed on normalization of function of hepatocytes, 2) reduces side effects frequency, that promotes better compliance with PHT and its efficacy.