Short-term physical and chemical stability of mixtures of anti-tuberculosis drugs for intravenous administration

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CONFLICT OF INTERESTIS: Yuria-pharm LLC, provided the authors of this study, drugs with active substances ethambutol, isoniazid, moxifloxacin, sodium chloride and levofloxacin as samples for free.

PURPOSE. To evaluate the stability of mixtures of anti-tuberculosis drugs for intravenous administration used for treatment of sensitive and resistant tuberculosis in time and in conditions close to the conditions of the use.
MATERIALS AND METHODS. Studied combinations: ethambutol + isoniazid in various concentrations, ethambutol + levofloxacin, ethambutol + moxifloxacin. In the stability study, samples were taken for analysis of the appearance, pH and concentration of drugs at specified times (immediately after mixing, after 16, and 24 hours).
RESULTS. The results of the chromatographic study indicate the absence of chemical interaction between the active pharmaceutical ingredients, high physical and chemical stability of the mixtures for up to 24 hours of storage under conditions close to the conditions of use, except the mixture of isoniazid with ethambutol, in which it is recommended to reduce the storage term to 16 hours due to the complexity of interpretation and the nature of potential impurities.
CONCLUSIONS. Study results indicate the possibility of simultaneous administration of a mixture of isoniazid and ethambutol when the preparation of the mixture was not more than 16 hours prior to administration and mixtures of ethambutol + levofloxacin and ethambutol + moxifloxacin with the preparation of the mixture no more than 24 hours before administration.

KEY WORDS: intravenous anti-tuberculosis drugs, compatibility, physical and chemical stability.

DOI: 10.32902/2663-0338-2018-18-1-13-18