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Pharmacokinetics of Prothionamide in Patients with MDR tuberculosis

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The total number of MDR-TB patients in Korea is not known but increasing (Park et al.). With patient non-compliance, Uniform dosing of the anti-TB drugs without considering individual differences for pharmacokinetics also contributes to an increase of MDR-TB. As for other infection diseases, TDM allows the clinician to make informed decisions timely adjusting regimen for anti-TB drugs and prevent the occurrence of resistance and eradicate TB (Peloquin et al.). This study shows the pharmacokinetic information of prothionamide in Korean and make it possible to practice TDM for prothionamide in the treatment of MDR-TB. More than 6 patients were recruited among the patients who have hospitalized with MDR-TB in the National Masan Tuberculosis Hospital were sampled at the times (0～24 hr, 13 points). After preparated, it was analysed with the HPLC (Internal standard:ethionamide, RT: (P) 6.13 and (E) 4.12 min) (Bartels et al.). Values for pharmacokinetis parameter are 1.69?}0.917 ??g/mL (CV 54.1%) for Cmax, 12.01?}7.414 ??g/mL (61.7%) for AUC??, 1.243?}0.634 (51%) L/h/kg for CL/F/kg, 4.33 ?} 1.70 h (39.3%) for Tmax, 3.16 ?} 0.26 h(8.3%) for t1/2 and 0.22 ?} 0.02 h?1(9.1%) for ke. The coefficience of variation for AUC??, CL and Cmax is relatively large like as to be reported for thionamide family (Zhu et al). On the other hand, compared to the pharmacokinetics for healthy volunteers, Tmax for MDR-TB patients is late about 2 times. It may be reason Absortion rate for patients is slow. Therefore, Individualized dosing is very important in the use of thionamides for the treatment of MDR-TB patients.

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