# of cyclophosphamide and alkylating activity in man after intravenous and oral administration.

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Abstract:

Since cyclophosphamide is used by both oral and i.v. routes in the treatment of hematological and solid malignancies, we designed a randomized, crossover clinical trial to evaluate the pharmacokinetics of this anticancer agent after either administration route. Plasma levels of cyclophosphamide and its two cytotoxic metabolites, 4-hydroxycyclophosphamide and phosphoramide mustard, were determined in seven cancer patients randomly assigned to treatment initially with either orally or i.v. administered cyclophosphamide with a 30-day interim between alternate therapy courses. Oral treatment was used initially in five patients and i.v. treatment in two patients, and the pharmacokinetic parameter, area under the plasma disappearance curve, was determined for each metabolite in each patient for both routes of drug administration. Statistical comparison of area under the plasma disappearance curve values for this set of patients indicated no significant differences for either metabolite for oral versus i.v. drug treatment, suggesting equal efficacy for these two routes of cyclophosphamide administration.