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Pharmacokinetic-Pharmacodynamic Modeling of Candesartan Cilexetil in Healthy Chinese Volunteers

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***SUMMARY*. The purpose of this study was to construct a pharmacokinetic-pharmacodynamic model to investigate the exposure-response relationship of candesartan cilexetil in healthy Chinese volunteers and provide relevant PK/PD parameters for use in clinical practice. Sixteen healthy Chinese volunteers received 8 or 12 mg candesartan cilexetil orally (n = 8/group). After single doses, Blood pressures and serum concentrations were measured simultaneously and PK-PD parameters were analyzed. There are some differences of pharmacokinetic-pharmacodynamic properties of candesartan between 8 and 12 mg oral administration. The time to peak serum concentrations were approximately 4 h, whereas the effects peaked at 6 h at both two dose levels. Hysteresis loops were found between effects and serum concentrations of candesartan after single dosing. The relationship between effects and effect-compartment concentrations was represented by a sigmoid-E_{max} model. With the parameters, the predicted effect-time profiles were very close to the profiles measured. The developed PK-PD model and relevant PK/PD parameters of candesartan may provide a more rational basis for dosage individualization.**

KEY WORDS: Candesartan cilexetil, Pharmacodynamics, Pharmacokinetics, Pharmacokinetic-pharmacodynamic modeling.

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