

Clinical Pharmacological Principles in Therapeutic Drug Monitoring (TDM)

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TDM is perhaps the most sophisticated way to ascertain that drug treatment is tailored towards the individual needs of the patient. Recent advances in pharmacogenetics clearly show that subpopulations of patients exist who require considerably higher or lower doses than those derived from controlled clinical trials, where usually a fixed dosage-schedule is used unless sharp pharmacological endpoints can be used for dose titration. TDM should be considered as part of a clinical pharmacological consultation aiming

to explore the mechanisms involved in interindividual variability in drug response. The consultation should consider psychological factors (poor compliance), pharmacological determinants such as drug-drug interactions and pharmacogenetics as well as pathophysiological factors (liver- and kidney function). The combination of conventional TDM and phenotyping of drug metabolic enzymes and transport mechanisms is particularly powerful in achieving sophisticated drug utilization (personalized medicine).