

Abstract

INFLUENCE OF SMOKING ON DRUG'S PHARMACODYNAMICS AND PHARMACOKINETICS II

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Introduction: The interaction between smoking cigarettes and using some types of drugs can significantly affect pharmacotherapy. For example, reducing of therapeutic effect or occurrence of side effects can be caused by smoking cigarettes.

Aims: The aim of the study was to describe and summarize information about interaction between smoking and selected drugs.

Methods: Sources were searched by bibliographic database such as PubMed and by web-search engine Google Scholar, in this diploma thesis. Examples of searched keywords are „smoking“, „drug's interaction“, „pharmacokinetics“, „pharmacodynamics“ etc. Keywords were entered individually or in combination. The most related articles were chosen for this thesis. From book sources, Stockley's drug interaction was used to search about information of drug's interactions with smoking.

Results: The available literature indicates that the mechanism of the interaction between smoking and drugs is largely at the pharmacokinetic level, in particular by increasing drug metabolism by induction of cytochrome CYP1A2. Pharmacodynamic interactions are explained by the action of nicotine on the peripheral and central nervous systems. These mechanisms of interactions and related observed effects in the body are listed in a summary table in the practical part of the thesis.

Conclusion: Individual interactions of medication should be evaluated for each patient. Actual health condition, dose of medication, type of drugs and other factors, which includes smoking status should be considered. It is important to observe the level of addiction to smoking cigarette and the number of smoked cigarettes per day. Observing of these factors leads to adjustment of certain medication dosage.

Key words: smoking, pharmacokinetics, pharmacodynamics, cytochrome, nicotine, polycyclic aromatic hydrocarbons