Identification and prevention of deleterious effects of supplementary health products on medical therapy: A challenge for clinical pharmacists

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INTRODUCTION

In the last decade it has become a challenging problem for the pharmaceutical profession that alongside their prescribed drug treatment patients take supplementary products (OTC, herbal remedies, food supplements, "panacea" etc.) without consulting their physician or pharmacist.

Our pilot exploratory study aims at exploring and analyzing interactions between drugs and additional remedies among inpatients and outpatients at departments of internal medicine.

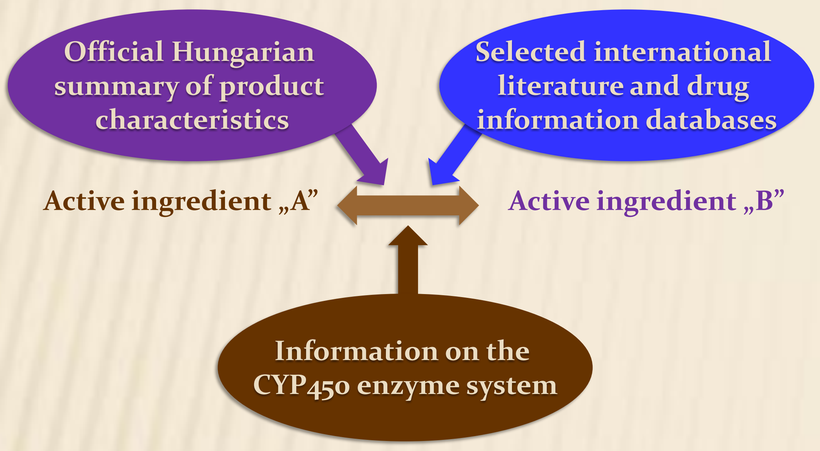

Figure 1. The general scheme of drug interaction evaluation.

Difficulties associated with supplementary health products:

- No comprehensive database exists
- Uncertain ingredients in products
- No marketing authorization required
- Unclear ingredient nomenclature
- Many interaction evaluation systems do not contain these products
- Patients do not tell their doctor/pharmacist about taking supplementary products (including OTC)

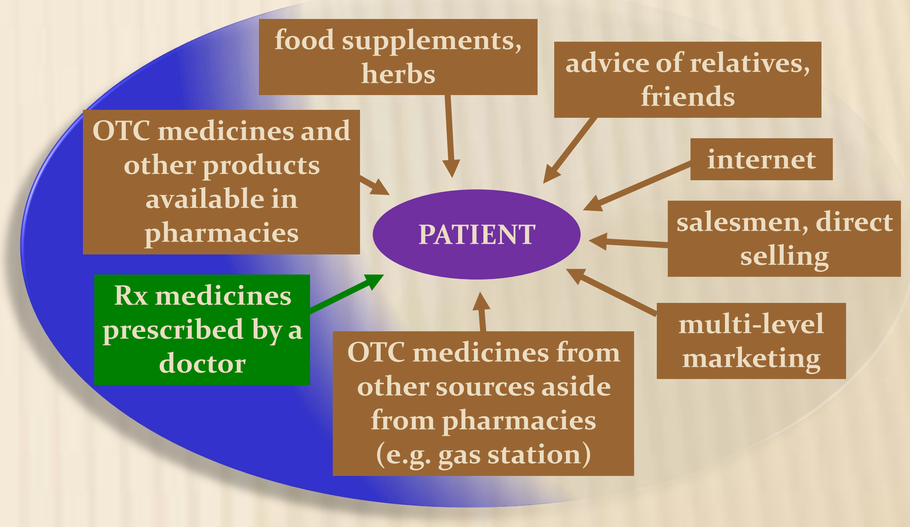

Figure 2. Blue area represents products taken by the patient which healthcare professionals have information about.

MATERIALS AND METHODS: PATIENT CHARACTERISTICS AND STUDY DESIGN

The patient interviews and the review of the medical records were performed by clinical pharmacists. We have gained information regarding current medication and additional remedies, past medical history, immunization status and known allergies with the aid of a **medication history worksheet** (see the extended worksheet attached).

Collected data was analyzed by an interaction evaluation software and database developed by our department in collaboration with HC Pointer Ltd. This database contains all the authorized or notified paramedicines and food supplements which have noteworthy market in Hungary. In the study of interactions we looked at products taken in the previous two weeks.

total number of surveyed patients	152
age	56.7±14.97 (16-85)
gender	65 male, 87 female (male to female ratio: 0.75)
smoking	35 smoker, 112 nonsmoker
place of medical treatment (for details see Figure 3)	University of Pécs Medical School, 1st Department of Internal Medicine

number of prescribed medicines	
according to patient interviews	5.1±3.59 (0-16)
according to medical records	7.3±4.60 (0-20)
number of supplementary products (including OTC medicines)	
according to patient interviews	2.5±2.00 (0-11)
according to medical records	0.4±0.65 (0-2)

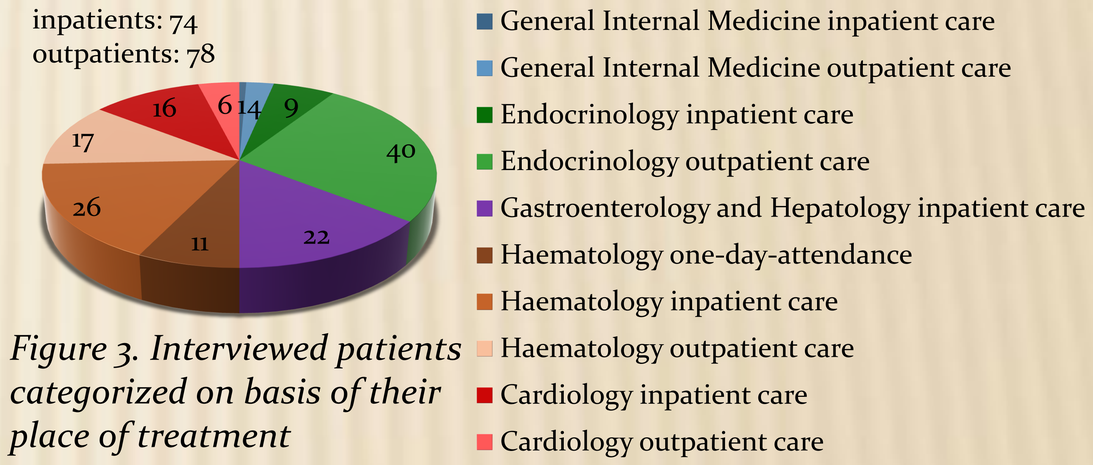

Figure 3. Interviewed patients categorized on basis of their place of treatment

RESULTS, CONCLUSION

153 interviewed patients → 130 reported supplementary product use (85.5%)

130 reported supplementary product use (85.5%) → 67 potential interactions identified (27.0%)

67 potential interactions identified (27.0%) → 25 clinically relevant interactions (13.8%)

Components of supplementary products which were most commonly involved in interactions (numbers in the brackets show numbers of interactions)	
potential interactions	ascorbic acid (9), magnesium (7), ibuprofen (5), St John's wort (4), ginseng (4), chamomile (4), vitamine E (4), cranberry (3), ginkgo (3), phenylephrine (3)
clinically relevant interactions	St John's wort (3), chamomile (3), cranberry (3), ibuprofen (3), ginkgo (2), garlic (2), magnesium (2), chondroitin (2), phenylephrine (2)

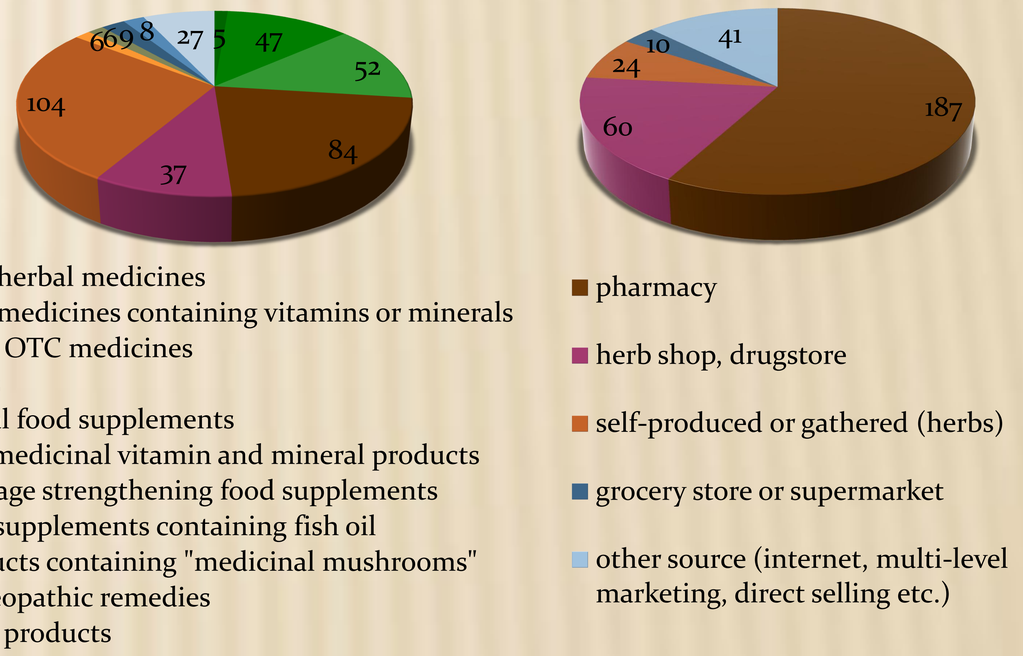

Figure 4. Types and procurement sources of supplementary products taken by the interviewed patient

As for the prescribed medicines coumarin anticoagulants, beta-blockers, diuretics, NSAIDs and antidiabetic agents were most often involved in interactions.

Our results show that **inpatients and outpatients both take supplementary health products extensively**, and that **many of the known interactions are occuring among these patients**. **Gathering detailed information about the use of these products should be included in extended medical histories in clinical pharmaceutical practice.** It is essential we explore the potential impact of these products on patients as well. Special software and databases are of great help because of the complexity of possible interactions.

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