Pilot study comparing online drug interaction resources used by Regional Medicines Information Services

Author: Ms. Iram Husain MFRPSII MScAPP, London Medicines Information Service, Northwick Park Hospital.

What is already **known**:
- UKMi recommend at least 2 resources when researching any medicines related question
- Previous research has suggested that no interaction resource is fully comprehensive
- Little is known about the overlap of drug interaction resources used by Medicines Information services
- The place of freely available drug interaction resources in research strategies is unclear

What this pilot **study adds**:
- More than two resources should be used to research drug interaction questions (ideally 3-4 resources)
- Freely available drug interaction resources may have a place as first line resources over paid resources
- Free resources offer potentially easier availability and reduced NHS costs

Introduction

Medicines Information services (MIS) may find that when using two resources to answer questions about drug interactions, they find **conflicting, limited or excessive information**. This can lead to inefficient use of resources (including staff time) and unnecessarily cautious responses. This pilot study aimed to identify how many resources should be used to get clear and concise advice regarding drug interactions and if any one resource was preferable over another.
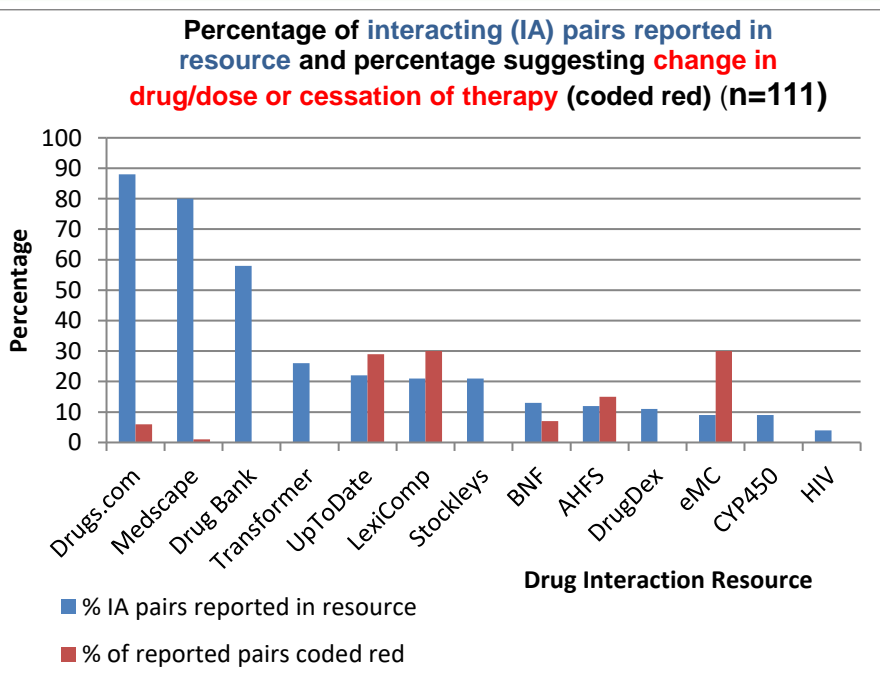
Method

Enquiry recording databases at two MIS were used to identify **drug interaction enquiries**. These were examined for interacting pairs of medicines, resources used, and answer given. Each interacting pair was then researched again against **13 UKMi approved** drug interaction resources (see chart)[1,2]. Some of these were free, others required a subscription. The original enquiry answers were compared against interaction data provided by each individual resource, to determine if any one resource could answer all the enquiries. A coding tool was piloted to categorise drug interaction outcome[3-5].

Results

Over 100 drug pairs were identified from 16 patient-centred enquiries. When all drug pairs were assessed against these resources, **Drugs.com** and **Medscape** (both free resources) included information about the most pairs of drugs (88% and 80% respectively). This was followed by **DrugBank** (free resource), which had information for 58% of drug pairs. The free resources mapped the answer given on more occasions than subscribed resources based on the piloted coding tool.

The chart shows the percentage of drug pairs present in each resource and the percentage number of times the resource suggested a change in drug/dose or cessation of therapy.

Percentage of interacting (IA) pairs reported in resource and percentage suggesting change in drug/dose or cessation of therapy (coded red) (n=111)

Legend:
- % IA pairs reported in resource
- % of reported pairs coded red

X-axis (Drug Interaction Resource): Drugs.com, Medscape, Drug Bank, Transformer, UpToDate, LexiComp, Stockleys, BNF, AHFS, DrugDex, eMC, CYP450, HIV

Discussion

No one resource is comprehensive for all drug interactions. It is advisable to **use more than two interaction resources** to gather enough information to inform a clinical decision. Some free drug interaction resources are appropriate for first line use. MIS and NHS clinicians should consider what advantage (if any) higher cost resources provide compared to those available at no cost.

References
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