

EVALUATION OF ELECTRONIC DRUG INTERACTION CHECKER DATABASES - RHEUMATOID ARTHRITIS PATIENTS CASE STUDY



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BACKGROUND

Due to sometimes difficult pharmacological management of the disease and comorbidities, the patients with rheumatoid arthritis (RA) are often subjected to polypharmacotherapy. Electronic databases with drug interaction checker functions can be a useful tool to predict potential drug-drug interactions however the descriptions may not always be supported by adequate data.

PURPOSE

To evaluate the validity and adequacy of drug-drug interaction descriptions of a commercial and an open-access database.

MATERIALS AND METHODS

The medical records of 25 patients receiving 5 or more medications (N=8,64±1,95) were analysed. The majority (84%) were receiving methotrexate (Figure 1) and 16% were on additional biologicals therapy (either adalimumab, etanercept or tocilizumab).

Lexi-comp™ and Drugs.com databases were used to identify potential interactions. The descriptions rated **D** (N=26) or **X** (N=1) (Lexi-comp™) or **Major** (N=21) (Drugs.com) were reviewed. The interaction descriptions were classified as either (1) appropriate (data based on primary sources and/or medicinal products' SmPCs), (2) undefined (general descriptions including multiple drugs or inconclusive data) or (3) inappropriate (data not corroborated by primary sources or misinterpreted).

RESULTS

The Lexi-comp™ and Drugs.com interaction descriptions were determined as “appropriate” (63 vs. 48%), “undefined” (26 vs. 33%) and “inappropriate” (11 vs. 19%) respectively. The majority of “undefined” classifications were due to class effect. The overestimation of biologicals and methotrexate interactions (even that concomitant use is recommended by current guidelines) was the main cause for “inappropriate” classifications (Figure 2).

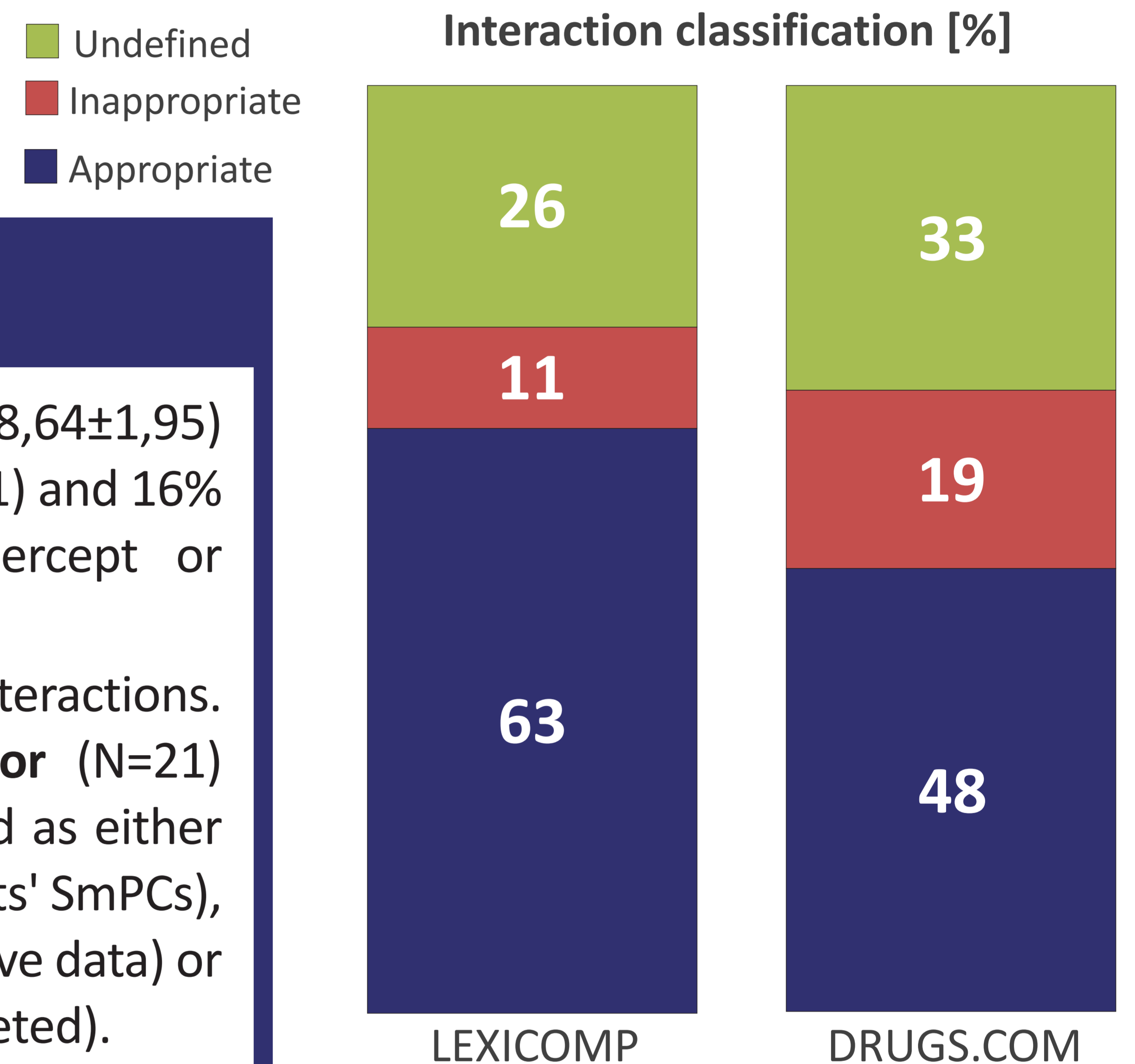


Figure 2:
Percentage of interaction classification for Lexi-comp™ and Drugs.com databases.

NUMBER OF PATIENTS RECEIVING THE MEDICATION

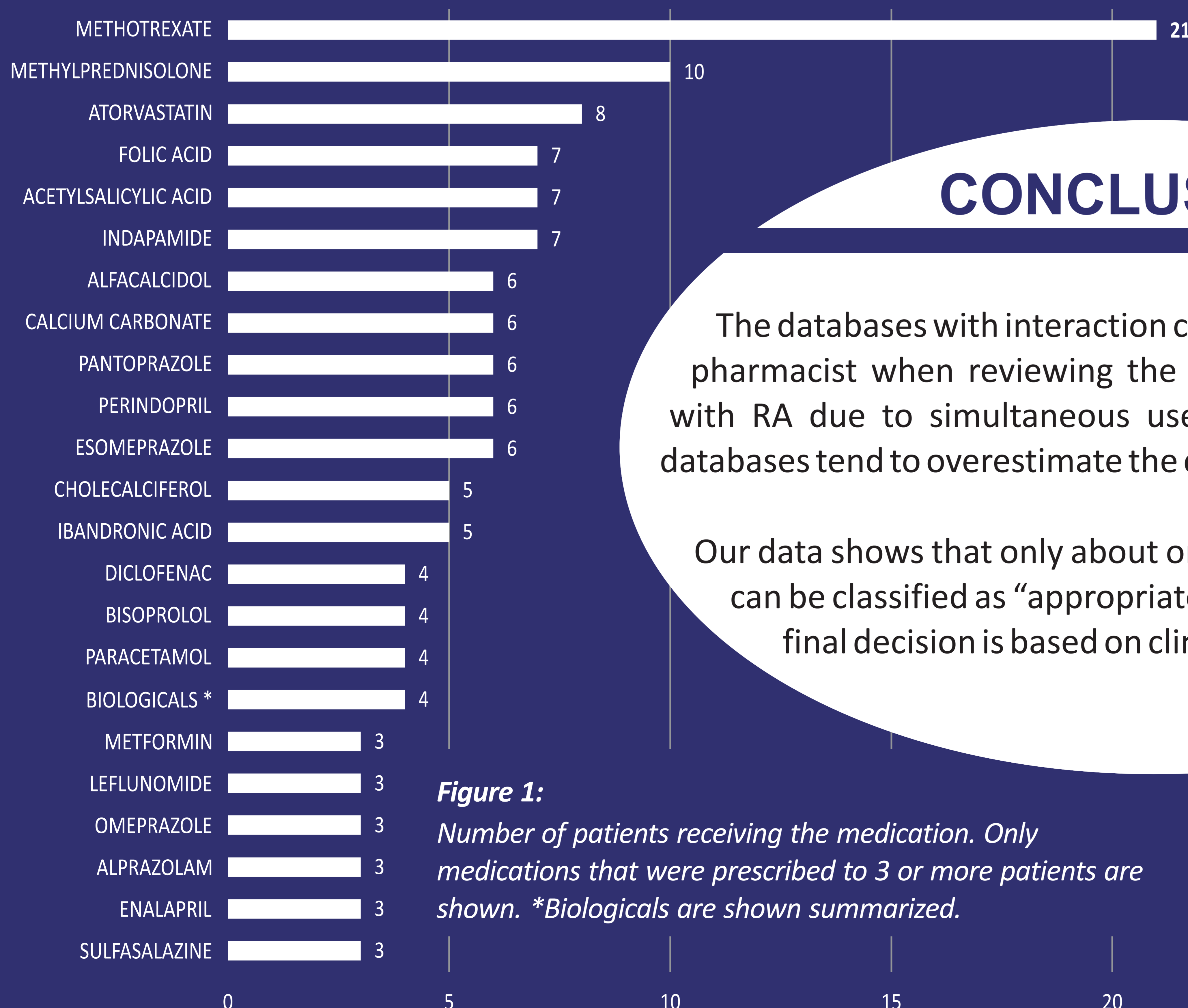


Figure 1:
Number of patients receiving the medication. Only medications that were prescribed to 3 or more patients are shown. *Biologicals are shown summarized.

CONCLUSIONS

The databases with interaction checker functions provide a powerful tool for a pharmacist when reviewing the patient's therapy. Nevertheless, in patients with RA due to simultaneous use of various immunomodulatory drugs the databases tend to overestimate the class effect of those medications.

Our data shows that only about one half (56% overall) of potential interactions can be classified as “appropriate”. It is therefore crucial that the pharmacist's final decision is based on clinical data.

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