Comparison of two drug interaction programs: Pharmavista and MediQ
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Background and Objective: Our pharmacy takes care of two long term care institutions. While checking all potential drug interactions, we compared two drug interaction programs: Pharmavista and MediQ. The basic features of both tools are described in figures 1-3.

Methods: For all patients, information was collected on all drugs taken. Then they were checked by both interaction tools. We considered only moderate and severe drugs interactions (Pharmavista class 1 to 3 out of 5, MediQ class 2 and 3 out of 3, see figure 2). The detected severe drug interactions (Pharmavista class 1-2, MediQ class 3) were compared in detail.

Results: 417 patients in both homes took 3250 drugs, a mean of 7.8 drugs per patient.
Pharmavista noted at least one potential interaction in 171 of 417 residents, (in total 287 moderate to severe interactions). MediQ found at least one clinically relevant interaction in 245 of 417 patients, in total 614, see figure 4. Pharmavista identified 8 serious drug interactions, whereas MediQ found 10. Two of these combinations (two times tizanidine – ciprofloxacine) were classified as severe by both systems, the other interactions by only one of the programs. One combination (mycophenolate – pantoprazole), which was considered as severe by MediQ (3/3), was not shown at all by Pharmavista. On the other hand, interactions between potassium and potassium-sparring diuretics, a known interaction of commonly prescribed drugs, were not found by MediQ. (Remark: After presentation of these results to the MediQ team, this has since been changed.)

Discussion: Both programs have a different classification system which makes it difficult to compare the results. Nevertheless the differences shown in our sample are huge.
In practice, many users of drug interaction programs put the filter on moderate to severe (or only severe) interactions in order to retrieve only relevant drug interactions and / or limit the number of results. In this way, relevant drug interactions may be missed.
MediQ is a system which has been developed in a psychiatric clinic and therefore the focus is on psychiatric drugs. This explains why some drug interactions are missing. The MediQ team is continuously working on the data base and systematically adding other drugs. If MediQ indicates no interaction you can still ask the expert team for a specific check. The findings are then integrated into the database.
In practice MediQ has a good search function (completes the word automatically while typing, entry of as many drugs as desired) and is very well documented: links to Pubmed abstracts, pharmacogenetics, dose adaptation, etc. The time to get the results of a query depends on the number of used drugs searched, because it works via the Web. It may take more than 2 minutes if you need to check more than 10 drugs, a situation which is not rare in geriatrics. In the meantime the speed has been improved.
Pharmavista is much faster, but the search function is limited to 8 drugs. Moreover you need to type the drug name correctly, because the search function is not fault-tolerant. The results are summarized by drug classes (see figure 3). Differences inside a class are described in the text, but it may be misleading if only the summary of results is viewed. On the other hand, it is easy to find out if there are alternative drugs of the same class. Risk factors and recommended measures are described systematically, see also figure 5.

Conclusion: Pharmavista is a commonly used interaction tool that is useful as a screening instrument (e.g. automatic interaction check of prescriptions). A broader and better search function would make it easier to use and save time.
MediQ is not (yet) suitable as a screening instrument. It is appropriate for individual patients with complex drug therapies or specific risk factors like low metabolism and provides a lot of useful background information.
In general, when using a drug interaction program the filter should not be put to narrow (e.g. not only to severe drug interactions).
To judge the relevance of the retrieved interactions it is advisable to read the details of the text.

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