Drug Interactions during Three Decades

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Drug interactions

As long as mankind has used plants,
animals and inorganic substances
to cure and alleviate health disorders,
drugs have probably been used in combinations
to potentiate their intended effects

It may be favourable to use
a combination of drugs,
if the combination is well documented,
to enhance the effect or
to reduce adverse effects

However,
physicians may inadvertently prescribe
improper combinations
resulting in less effect or
more adverse drug reactions

Aim of study

to evaluate the change in risk over time of receiving potentially interacting drugs, from 1983 to 2003

Materials and Methods

- Three periods of fifteen months;

  1983, 1993, 2003
- Prescriptions from all individuals

  (n=8,318; 8,726; 8,214) with two or more prescriptions
- Collected from an ongoing cohort study in the county of Jämtland, Sweden
- Computerized interaction detection system

Results

Polypharmacy increased with 62%, from 1983 to 2003

Study period	Filled prescriptions per subject
1983	9.05
1993	10.6
2003	14.6

Results

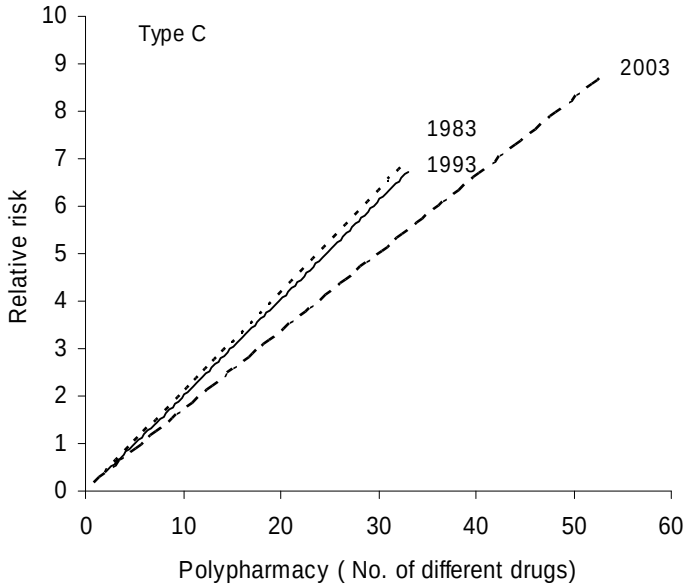
Relative risk of potentially interacting drugs

- *increased* for type C interactions
  relative risk 1.177 (95% C.I. 1.104-1.256)

- *decreased* for type D interactions
  relative risk 0.714 (95% C.I. 0.587-0.868)

Results

Relative risk positively correlated to
the pronounced increase in polypharmacy



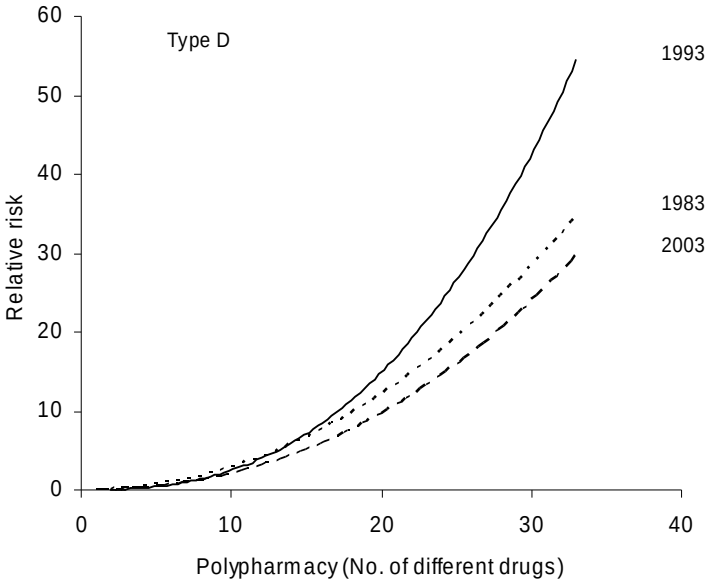


Fig. 1 Relative risk of potential interactions type C and D correlated to polypharmacy. 1983, 1993 and 2003 refer to the study periods Oct 1983 - Dec 1984, Oct 1993 - Dec 1994 and Oct 2003 - Dec 2004 respectively.

Conclusions

- pronounced increase in polypharmacy
- reason for prescribers and pharmacists to be aware that drug interactions has grown over time
- risk of receiving potentially interacting drugs

  has increased for the type C interactions,

  but decreased for the more severe type D interactions

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