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Agreement between potential drug interactions identified by an electronic tool and clinical judgment: INTERcheck® versus physicians.

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Background

The software INTERcheck® provides to physicians the potential drug-drug interactions (pDDIs) of a patient therapy classifying them based on clinical relevance from the literature, as A (minor), B (moderate), C (major), D (contraindicated).

Purpose:

to assess the concordance between the clinical relevance of pDDIs as classified by INTERcheck® and the physician's personal judgement.

Materials and methods

This retrospective study, conducted in 4 wards between April and October 2014, identified pDDIs from medical records of elderly inpatients ≥ 65 years, on ≥ 5 drugs using INTERcheck®. Clinical relevance as classified by INTERcheck® was then compared with physician's judgement through a structured interview consisting of four questions, as follows: is the pDDI known? is it clinically relevant?, if yes, why?, the knowledge of the pDDI at the time of prescription would have changed your prescribing approach?
Concordance between INTERcheck® and physician's judgement was defined as: classification of "clinically relevant = yes" by physician and class C or D by INTERcheck®; classification of "clinically relevant = no" by physician and class A and B by INTERcheck®.

Results

Medical records of 60 inpatients were analyzed: 1658 drugs were prescribed, 481 unduplicated pDDIs were detected by INTERcheck® and subsequently evaluated by physicians (*Fig.1*). Of those, 229 (47,6%) were unknown and 235 (49%) were classified by them as clinically relevant: 158 (67%) for potential adverse effects, 58 (25%) for patient complexity/co-morbidity, 19 (8%) for other reasons.
According to INTERcheck®, pDDIs were classified as: 12 (2,5%) A; 300 (62,4%) B; 113 (23,5%) C and 56 (11,6%) D (*Fig.2).*
Concordance between physician's judgment and INTERcheck® was: 83% (10/12) for A, 63% (189/300) for B, 73% (83/113) for C, 70% (39/56) for D (*Fig.3*).
The knowledge of the pDDI at the time of prescription would have resulted in a change of therapy in 28,5% (137/481) of cases.

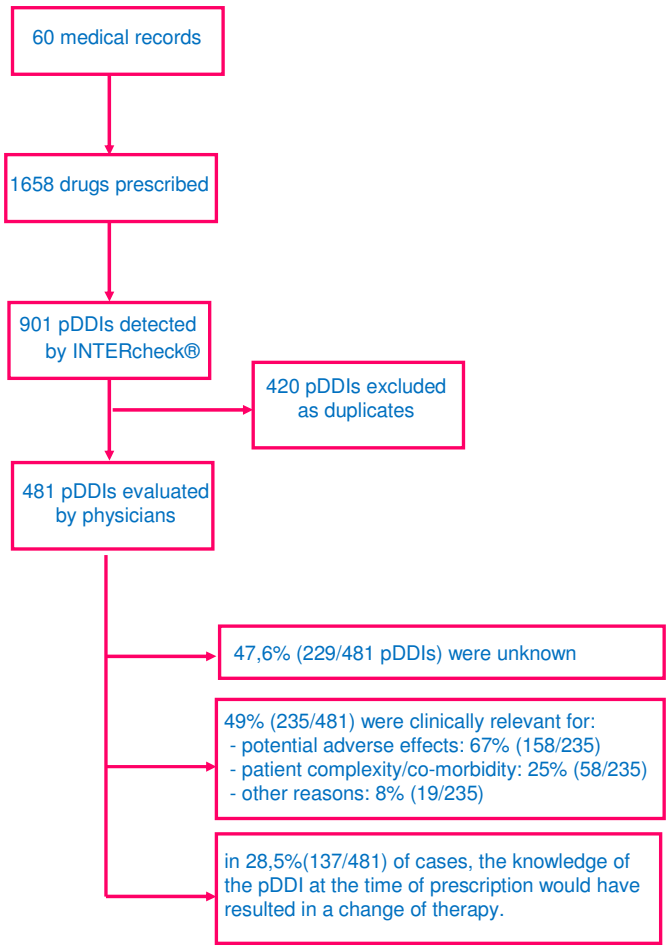

Fig. 1. Identification, screening and evaluation of pDDIs.

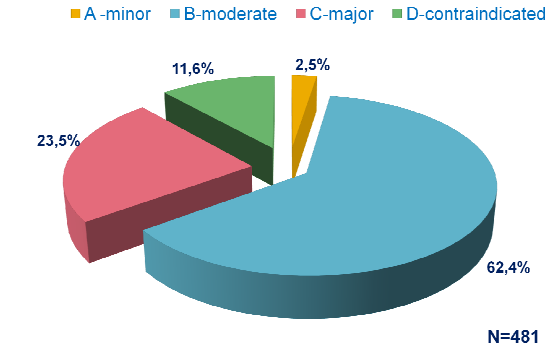

Fig. 2. pDDIs according to INTERcheck®.

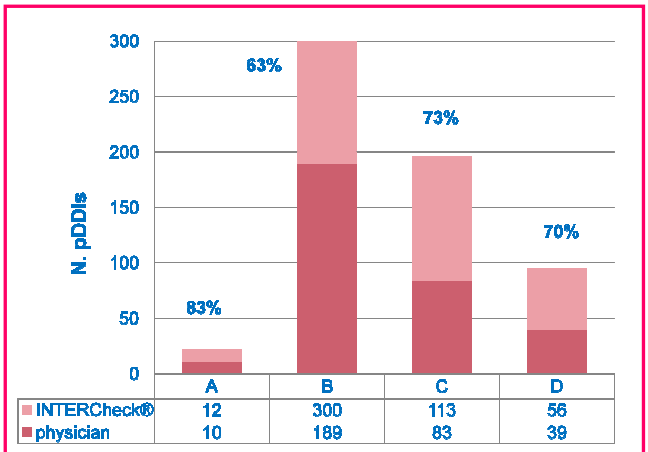

Fig. 3. Concordance of pDDIs between physician's judgment and INTERcheck®.

Conclusions

A high concordance between INTERcheck® and physician's judgement was found throughout all INTERcheck® classes. The lowest concordance was retrieved in class B. This finding will be taken into account to improve this database according to physician's needs.