THE ANALYSIS OF INTERACTIONS AND POTENTIALLY INAPPROPRIATE MEDICATIONS IN HOSPITALISED SENIORS

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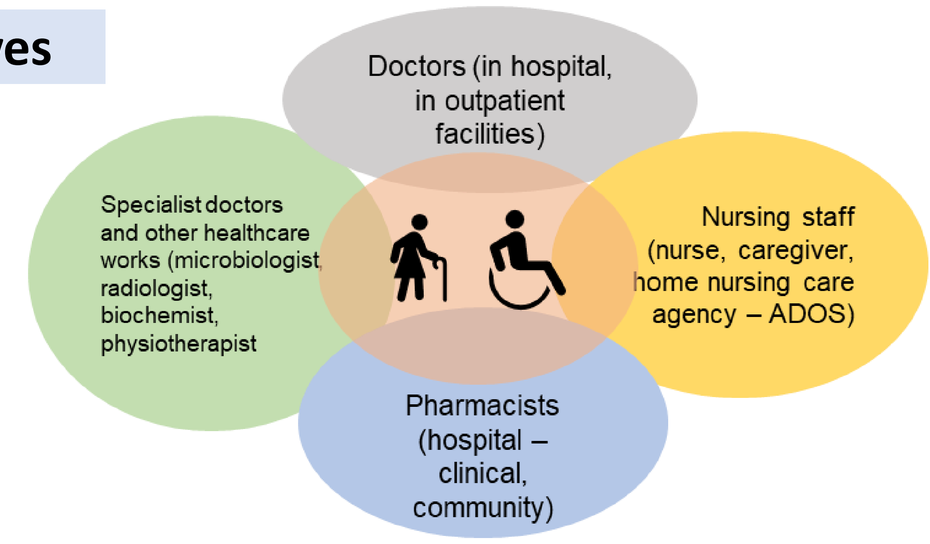
Backround and importance

The aging population is a pressing issue for our society.. Therefore, we need to adapt to the increase in the number and needs of our elderly patients. Furthermore, we need to individualize their pharmacotherapy in hospital and outpatient facilities. **A clinical pharmacist can play an important role in a multidisciplinary team**.

Aim and objectives

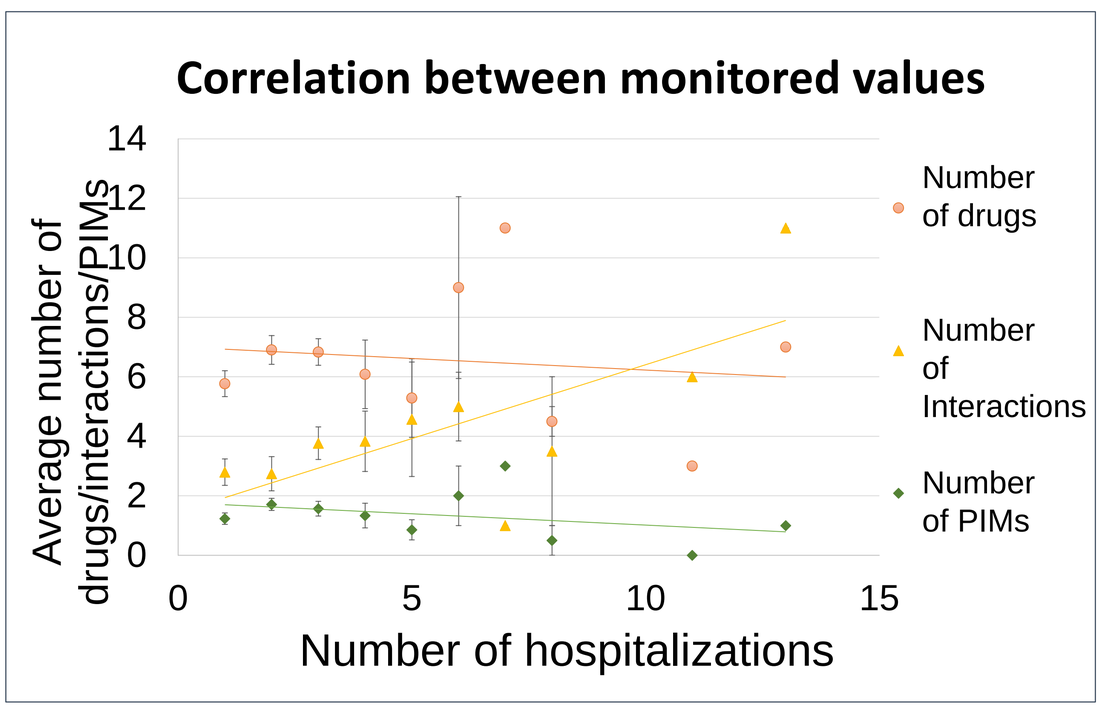
Monitor the patient´s pharmacotherapy of over 65 years of age.



Materials and methods

- Retrospective analysis of the medical records of 127 patients of over 65 years of age hospitalized in the geriatrics inpatient department in the period September-December 2018 (4 months) at the Hospital AGEL Komarno (via the hospital software).
- Analysing possible interactions between drugs; evaluation of possible drug interactions of selected groups X, D, C (Lexicomp® program).
- Monitoring and quantification of potentially inappropriate medicinal products (PIMs) used; PIMs with the indicated doses were evaluated according to the EU(7)-PIM list (2015). The duration of drug use was not assessed.
- Tracking the number of hospitalizations.
- The results were statistically analysed. Looking for correlations between monitored values.

Results



Results in numbers

The group consisted of	127 patients
Average age	83 years (91 women, 36 men)
Average number of drugs used per day	6 drugs, the largest number of drugs used by one patient was 16
The number of possible drug interactions	425 interactions in the whole group, in average 3/patient; only 26 patients had no interactions at all
Very serious drug interactions (labelled X)	8 in the whole group, in average 0,06/patient; interaction pairs occurring in the group: escitalopram – quetiapine, dabigatran etexilate – deltaparin, rasagiline – trazodone, buprenorphine – tramadol, enoxaparin – clopidogrel, atropine/diphenoxylate – potassium chloride, cyproheptadine – rasagiline, potassium chloride – quetiapine
Serious drug interactions (labelled D)	47 in the whole group, in average 0,37/patient; most frequently occurring interaction pair: metamizole - ASA
Less serious interactions that require patient monitoring (labelled C)	371 interactions in the whole group, in average almost 3/patient; most frequently occurring interaction pair: ASA – furosemide
PIM	In average 1,43 PIM/patient/day; the 3 most frequently used PIM in the group: pantoprazole (26 %), alprazolam (19 %), digoxin (11 %)
Correlation between number of used drugs and number of interactions	In this group it was not confirmed, that the more drugs patients take, the greater the probability of a drug interaction
Correlation between number of interactions and PIMs	Number of interactions was not significantly higher between the groups of patients with and without PIM. However, the difference in the number of PIMs in patients with/without interaction in therapy was statistically significant ($p<0,05$).
Correlation between number of used drug and PIM	There was a moderately strong relationship between the number of used drugs and PIM confirmed ($\rho=0,611$, $R^2=0,915$, $p<0,01$). Which means that the more drugs the patient takes, the greater the probability of using PIM.
Correlation between number of used drugs, PIMs and hospitalizations	Patients were hospitalized on average almost 3 times in 4 months. It was found that the number of hospitalizations did not correlate with the number of used drugs ($\rho=0,054$, $R^2=0,0178$, NS) or number of PIMs ($\rho=0,002$, $R^2=0,1249$, NS), but had a weak relationship with the number of potential drug interactions ($\rho=0,19$, $R^2=0,5086$, $p<0,05$).

Conclusion and Relevance

One patient used on average 6 drugs per day. No association between the number of drugs and the number of interactions was confirmed in this set. However, it was confirmed that the probability of hospitalization is greater at patients, if there occur more potential interactions in the patient's treatment ($p<0.05$). The association was found that the more drugs the patient take, there is a greater probability of using PIM ($p<0.01$). After such a period of time the established values may require a revaluation.