PIM-Check used by physicians to reduce drug-related problems in internal medicine

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Background

Drug related problems (DRPs) are associated with :

- adverse drug events,
- increased length of stay
- Increased hospital costs

Potentially inappropriate medication (PIM) includes **over-prescription**, **under-prescription or mis-prescription** and is a risk factor for DRPs.

PIM-Check has recently been developed to detect PIM in internal medicine patients.

Objective

To determine if PIM-Check electronic application, used by physicians, can decrease DRPs in internal medicine patients.

Method

- ✓ Open label prospective study (2 consecutive periods of 1 month)
- ✓ Patients admitted for > 48h in 7 internal medicine wards
- ✓ **Period 1**: patients treated with usual care (control group).
- ✓ **Period 2**: patients treated with usual care and a medication review performed by chief residents within 24h after admission using PIM-Check electronic application (intervention group).
- ✓ At 48h, collection of : all medications, lab results, comorbidities and active diagnosis.
- ✓ **Endpoints** : DRPs identified by a "gold standard" group (1 clinical pharmacist, 1 clinical pharmacologist, 2 attending-physicians of internal medicine), analysing all patients-dataset (blinded to period group).

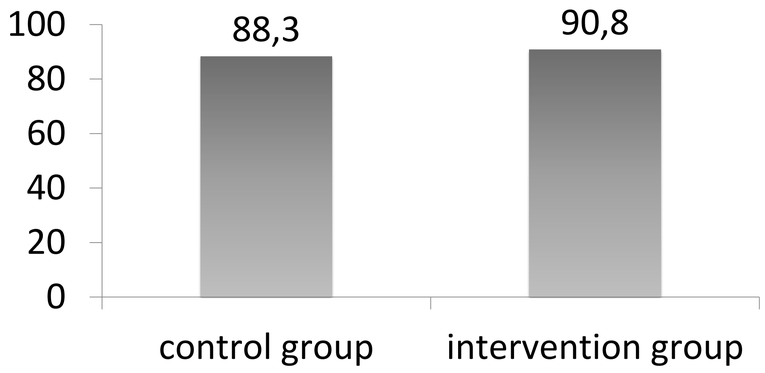
Results

Patients characteristics

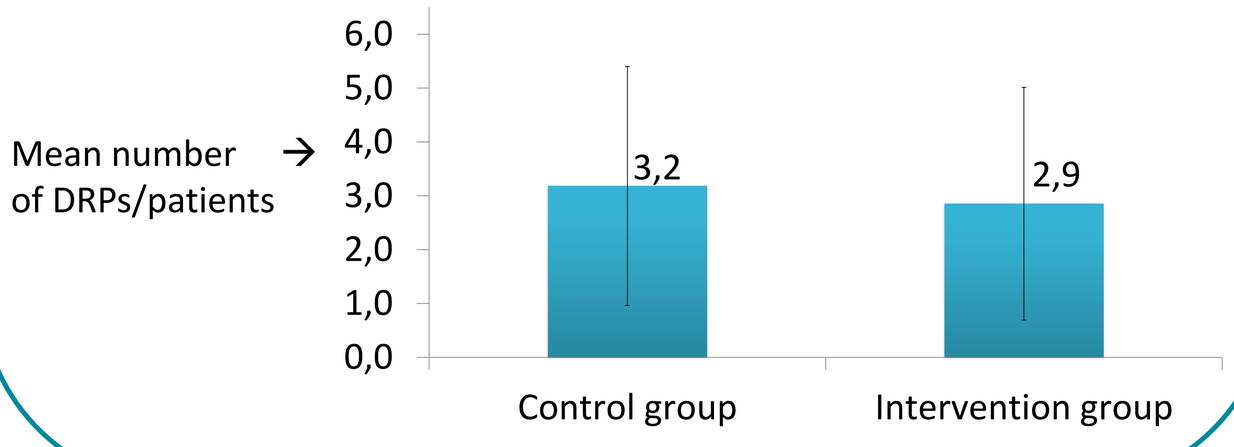
- **297 patients**: 188 in control group and 109 in intervention group
- Demographic characteristics are similar in control and intervention groups (age, sex, comorbidities, alcohol/tobacco consumption and number of drug prescribed).

Number of DRPs

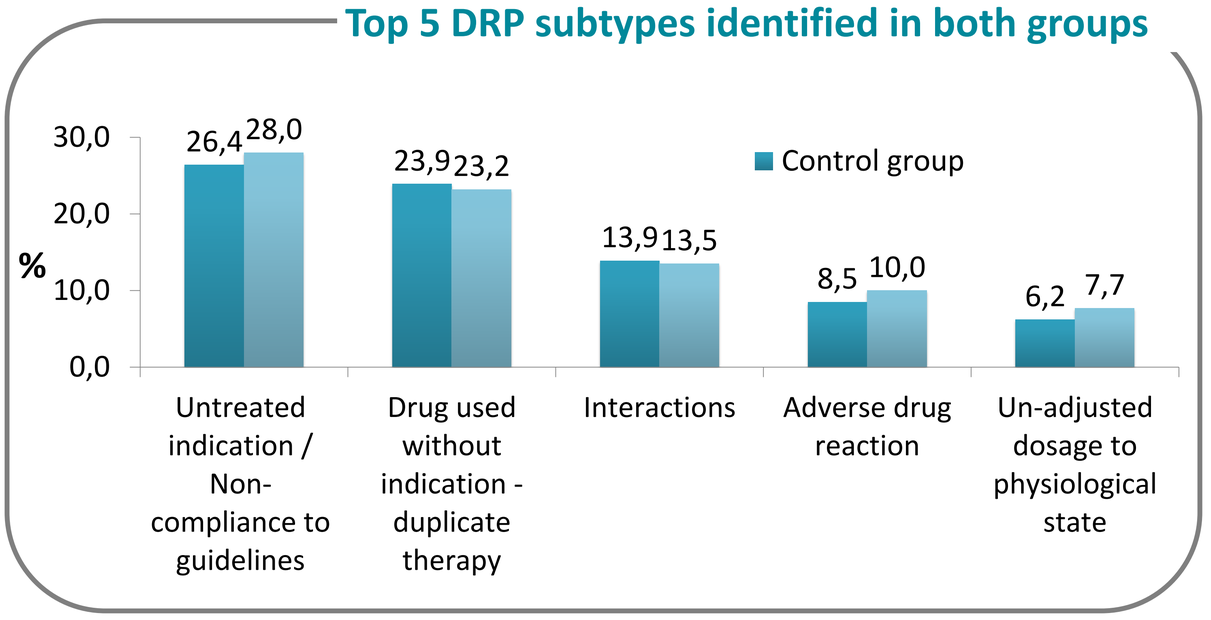
- Entire population : **909 DRP** were detected (mean of **3.1 ± 2.2 DRP/patients**)
- Mean DRP and subtype are distributed **similarly** in both group (p-value 0,12)



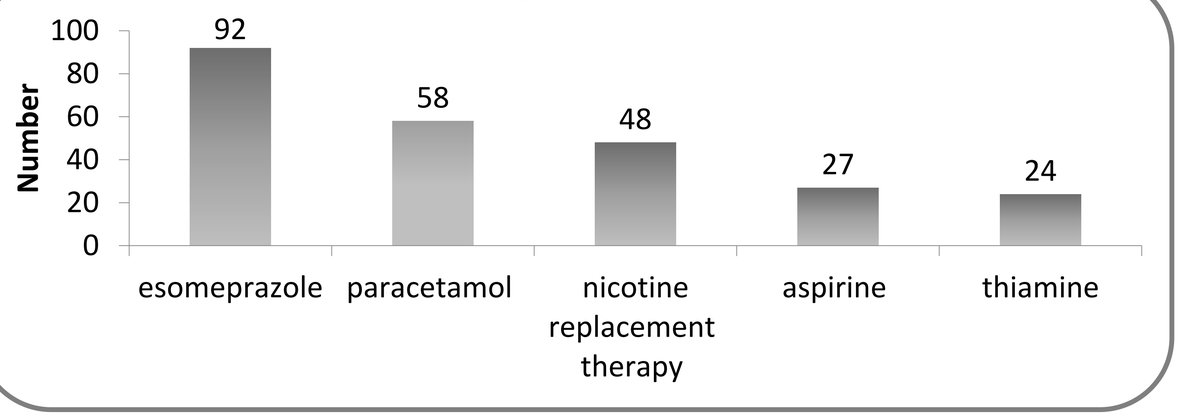
← Percentage of patients with at least one DRP



Top 5 DRP subtypes identified in both groups



Top 5 medications involved in DRPs



In Intervention group : DRP detection by PIM-Check

- Mean number of statements provided : **13.9** ± 7 **per patients**
- **33.4 %** of DRPs identified by the gold standard group were highlighted by PIM-Check
- However no treatment modification was performed by prescribers

Conclusion

- ✓ PIM-Check allowed identifying 1/3 of DRPs approved by a gold standard group
- ✓ Lack of impact on DRP can be explained by :
  - The high number of statements displayed by the electronic application
  - The reluctance of hospital physicians to modify treatment plan established by the general practitioner for chronic medical conditions, especially in the first 48h of the hospitalisation.

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Authors report no conflict of interest
http://pharmacie.hug-ge.ch/rd/posters.html