ELECTRONIC CLINICAL DECISION SUPPORT FOR PHARMACOTHERAPEUTIC INTERVENTIONS TO REDUCE ANTICHOLINERGIC BURDEN IN OLDER HOSPITALISED PATIENTS

M. van Geel[1], T. Leenders[2], A. Keyany[2], D. Arnoldussen[3], T. van Asseldonk[4], B. Maat[2*]
*b.maat@etz.nl [1]Department of Pharmacoepidemiology and Clinical Pharmacology, Utrecht University, Utrecht, The Netherlands. [2]Clinical Pharmacy, Elisabeth-TweeSteden Hospital, Tilburg, The Netherlands. [3]Department of Geriatric Medicine, Elisabeth-TweeSteden Hospital, Tilburg, The Netherlands. [4]Department of Neurology, Elisabeth-TweeSteden Hospital, Tilburg, The Netherlands.

4CPS-040

Relevance

In elderly, high anticholinergic burden (**ACB**) is associated with negative clinical outcomes such as:

- Falls
- Impaired cognition
- Delirium
- Increased morbidity

Hospitalisation increases ACB. Electronic clinical decision support (**eCDS**) may help prevent this.

Aim

To reduce ACB in older hospitalised patients through eCDS-based pharmacotherapeutic interventions.

Methods

Prospective intervention study.
In April and May 2022.
Elisabeth-Tweesteden hospital, Netherlands.

Inclusion criteria:

- Age ≥65 years
- ACB score ≥8
- Hospitalisation ≥ 72 hours

eCDS:
Homegrown automated **rule-based patient list** in electronic health record (EHR) to show patients who have anticholinergic medication.
In the list the **ACB score per patient** is shown, including **anticholinergic medication** that causes anticholinergic burden per patient, to support clinical decision making at patient level.

Intervention:
Review of patients' anticholinergic medication → **pharmacist-led advice** to the patient's attending physician by phone → documentation in EHR

Outcomes:

- Primary: **% of patients with ACB reduction** & **acceptance rate** of interventions
- Secondary: change in ACB score at discharge compared to admission & nature and frequency of anticholinergic side effects

Data analysis: descriptive statistics.

Conclusion

eCDS-based pharmacotherapeutic interventions led by a clinical pharmacist have potential to reduce the anticholinergic burden in older hospitalised patients.

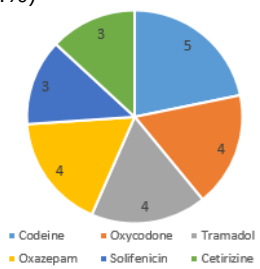
Results

Patients:

- 43 patients reviewed for intervention
- **43 interventions in 23 patients** (53.5%)
- Mean 1.87 (± 0.81) interventions per patient

Interventions:

- **Dose reduction** n = 7 (16.3%)
- **Alternative medication** n = 4 (9.3%)
- **Discontinuation** n = 32 (74.4%)
- **Top 6 drugs** intervened:
  - Codeine n = 5
  - Oxycodone n = 4
  - Tramadol n = 4
  - Oxazepam n = 4
  - Solifencin n = 3
  - Cetirizine n = 3



Primary outcomes:

- **41.9% of patients had reduction in ACB score**
- Mean reduction: 1.46 points (±0.79) per patient
- **Acceptance rate of interventions: 65.1%**

Reasons for not accepting pharmacist-led advice:

- Indication not known n = 7 (46.7%)
- Therapy necessary n = 2 (13.3%)
- Patient discharged n = 1 (6.7%)
- Physician not responsible n = 1 (6.7%)
- Unspecified reason n = 4 (26.7%)

Secondary outcomes:

- ACB score at discharge
  - Lower proportion of patients with increased ACB score during admission.
  - **Higher proportion of patients with decreased ACB score during admission.**

	Pre-intervention patients Frequency, n (%)	Post-intervention patients Frequency, n (%)
ACB score		
Increase	283 (42.1)	70 (33.7)
Decrease	31 (4.6)	35 (16.8)
No change	358 (53.3)	103 (49.5)
Total	672 (100)	208 (100)

- Anticholinergic side effects
  - In 76.7% of patients (n=33)
  - Most common: constipation (n=19) and confusion (n=14)