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European Geriatric Medicine Society
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MEDICATION REVIEWS IN THE ED FOR OLDER ADULTS

WHY IS THIS IMPORTANT

Up to 30% of hospital admissions in older adults are related to Adverse Drug Events (ADEs). ADEs are associated with an increased risk of hospitalisation, adverse outcomes, increased costs and death. About half of these ADEs have been considered preventable. Polypharmacy, an increased anticholinergic burden and use of Potentially Inappropriate Medications (PIM) are important risk factors for ADEs. Age-related changes in pharmacodynamics and pharmacokinetics render older people more vulnerable to medication-related harm.

HOW TO CONDUCT A COMPREHENSIVE MEDICATION REVIEW IN THE ED

1. Medication reconciliation:

- Gather as much information as possible about medication, including over-the-counter medications.
- Structure your history: name of drug, dose, form of application, frequency.
- Identify any recent changes to medications, including dose alterations.
- Enquire about compliance and concordance.

2. Identify possible drug-related admissions:

- Consider whether an ADE could be a contributing factor for admission.
- Consider drug-drug interactions AND drug-disease interactions (e.g. falls due to orthostatic hypotension in Parkinson's disease).
- Determine the anticholinergic burden - this is a modifiable risk factor for delirium.

3. Medication review:

- Perform a structured and standardised screen for PIMs (e.g. tools such as the Medication Appropriateness Index or STOPP-START).
- Consider patient preferences, primary (clinical) concern, comorbidities and frailty status or prognosis.
- Screen for undertreatment.
- Carefully review psychotropic drugs.

If a comprehensive medication review cannot be performed in the ED, consider referring to a geriatric day hospital or clinical pharmacist for medicines optimisation.

This education material was developped by the *European Task Force for Geriatric Emergency Medicine*, which is a collaboration between the *European Society for Emergency Medicine* (EUSEM) and the European Geriatric Medicine Society (EuGMS). For more information, please visit: **geriEMEurope.eu** and follow us on Twitter: **@geriEMEurope**.

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Drugs often related to ED admissions	Common drugs with high anticholinergic burden
Diuretics*	Antihistamines: Dimenhydrinate, Diphenhydramine, Hydroxyzine, Promethazine, Scopolamine
NSAIDs*	Parasympatholytics: Biperiden, Trihexyphenidyl
Antiplatelet therapies*	Spasmolytics: Butylscopolamine
Anticoagulants*	Antispasmodics: Oxybutynine, Tolterodine, Fesoterodine, Darifenacin, Solifenacin
Anti-diabetic medications*	Bronchiolytic inhalatives: Ipratropium, Tiotropium, Aclidiniumbromid
Psychotropic agents	Mydriatics: Atropine, Scopolamine, Tropicamid
Antineoplastics	Tricyclic antidepressants and similar agents: Amitriptyline, Clomipramine, Doxepin, Imipramine, Nortriptyline
Immunosuppressants	Others: Carbamazepine/Oxcarbamazepine

*) drug classes marked with * all together comprise 50-60% of all ADEs

WHAT CAN WE DO TO REDUCE THE RISK OF ADE IN OLDER ADULTS?

1. New therapies at the ED:

- Prescribe cautiously and consider (initiation of) deprescribing if possible.
- Avoid PIMs. Use e.g. START/STOPP criteria or other software-supported approach to aid in decision-making. If there is any uncertainty, consider consulting geriatricians or pharmacists for additional support.
- Calculate the glomerular filtration rate (GFR) rather than just relying on the creatinine; adjust doses of medications accordingly.
- Avoid using NSAIDs or tramadol due to high risk of ADEs. In patients with severe pain go for strong opioids (consider newer opioids with less interactions).
- Do not use benzodiazepines as first line therapy in the management of delirium in older people (except for alcohol withdrawal).

2. Prior to discharge from the ED:

- Reassess patient's drug regimen taking into consideration patient preferences, life expectancy, comorbidity burden and overall feasibility.
- Inform your patient and/or their caregiver by handing out a prescription plan (generic name, dose, frequency and reason for prescription).
- Ensure that patients' health care providers are informed about any changes.
- Ensure that patients are taught how to use medications correctly (e.g. new application of aerosols).

TOOLBOX & REFERENCES

All relevant toolboxes and references to scientific publications can be found via the adjacent QR-code.

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