UPMC PALLIATIVE AND SUPPORTIVE INSTITUTE

THE TABLET: PALLIATIVE CARE PHARMACY TIPS

November 12, 2021 Vol. 1, No. 30

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If you have a topic you would like the pharmacy team to answer, please send your suggestions to: lowrymf@upmc.edu

TODAY'S TOPIC:

Anticholinergic Burden in Palliative Care

Background:

Anticholinergic medications work by blocking the neurotransmitter acetylcholine within the nervous system. They have been known to cause negative outcomes for older adults given their broad mechanism. These side effects include but are not limited to: confusion, blurred vision, constipation, urinary retention, dizziness, delirium, and dry mouth. The magnitude of these side effects is known to increase with increased number of anticholinergic medications taken concomitantly. Anticholinergic medications-related side effects could be adding to the symptom burden for our palliative care population. Numerous scales exist to classify medications according to their anticholinergic activity and are intended to be used for specific populations during their development. No scale has been developed specifically for patients with complex chronic conditions.

Importance:

In our palliative care population, anticholinergic burden could contribute to a patient's overall symptom burden and/or lead the prescribing cascade. It is important for palliative care clinicians to be aware of the anticholinergic burden scales and impact on common symptoms, such as delirium, to maximize our patients' comfort and minimize suffering.

The Literature:

J Patient Saf. 2021 Oct 22. doi: 10.1097/PTS.0000000000000929. Online ahead of print.

Concordance among 10 different anticholinergic burden scales in at-risk older populations

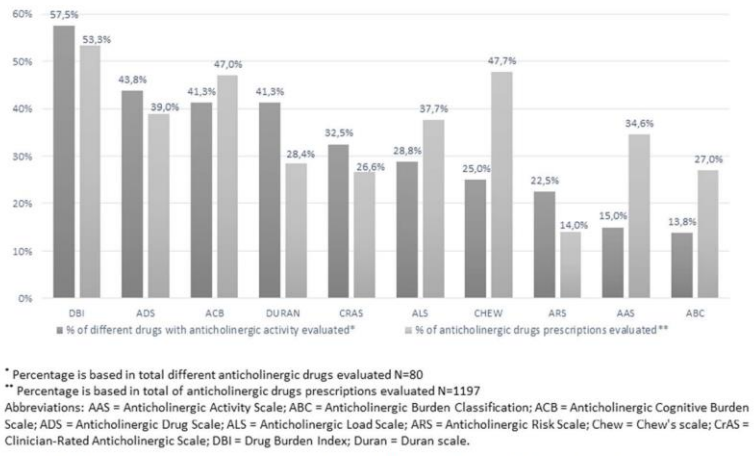
Objective: To evaluate the concordance among 10 anticholinergic scales for the measurement of anticholinergic drug exposure in at-risk elderly patients in primary care

Methods:

- 8 month, cross-sectional, multicenter study (Spain) in "complex" patients ≥ 65 years old in treatment with at least 1 medication with anticholinergic activity, list of medications that were present on any of the anticholinergic scales was recorded for each patient
- Anticholinergic burden and risk detected using the 10 scales included on Anticholinergic Burden calculator
- Strength of concordance evaluated by scale of Landis and Koch (strength of concordance: 0.00 (poor), 0.01-0.20 (slight), 0.21-0.40 (fair), 0.41-0.60 (moderate), 0.61-0.80 (substantial), and 0.81-1.00 (almost perfect)
- Kappa statistic used to quantify concordance

Results: n= 473 (60.3% female, mean age = 84)

- Median number of chronic drugs = 11, median of medications with anticholinergic burden was 2, with median anticholinergic burden between 1-3 points



* Percentage is based in total different anticholinergic drugs evaluated N=80
** Percentage is based in total of anticholinergic drugs prescriptions evaluated N=1197
Abbreviations: AAS = Anticholinergic Activity Scale; ABC = Anticholinergic Burden Classification; ACB = Anticholinergic Cognitive Burden Scale; ADS = Anticholinergic Drug Scale; ALS = Anticholinergic Load Scale; ARS = Anticholinergic Risk Scale; Chew = Chew's scale; CrAS = Clinician-Rated Anticholinergic Scale; DBI = Drug Burden Index; Duran = Duran scale.

FIGURE 1. Proportion of different drugs and prescriptions with anticholinergic activity evaluated by each scale.

- K statistics ranged from -0.175 (DBI versus Chew) to 0.708 (AAS versus Chew). Best concordance was obtained between AAS Scale and Chew (0.708), followed by CrAS and Duran (0.632) and AAS and ACB (0.618). Strength of concordance between these scales is substantial.

Conclusion: Agreement of scales in elderly patients with complex chronic conditions was highly variable and great care should be taken when assessing anticholinergic drug exposure using existing scales because of the wide variability among them.

More on the AAS Scale…

J Neurol Neurosurg Psychiatry. 2010 Feb;81(2):160-5

Use of drugs with anticholinergic effect and impact on cognition in Parkinson's disease: a cohort study: **Anticholinergic Activity Scale (AAS)**

Table 1 Rating of anticholinergic activity of drugs used in the sample

Drug class	0	1	2	3	4
Antiparkinsonian agents	Bromocriptin Cabergoline Levodopa Ropinirole Pergolide Pramipexole Selegilin Tolcapone				Benztropine Orphenadrine Trihexyphenidyl
Analgetics and anti-inflammatory drugs	Acetylsalicylic acid Buprenorphine	Propoxyphene			
Antidepressants	Mianserin Moclobemid Sertraline Venlafaxine		Citaloprame Fluoxetine Fluvoxamine	Nortryptyline Paroxetine	Amitriptyline Doxepine Trimipramine
Antipsychotics	Chlorprotixen Haloperidol Melperone Perphenazine Prochlorperazine		Quetiapine	Promazine Olanzapine	Clozapine Thioridazine
Antidiabetic agents	Glibenclamide Glipizide				
Anxiolytics and sedative drugs	Clomethiazole Nitrazepam Oxazepam Zopiclone	Diazepame Flunitrazepame Phenobarbital			
Cardiovascular agents	Amlodipin Atenolol Bumetamide Hydrochlorothiazide Captopril Disopyramid Dipyridamol Enalapril Isosorbiddinitrat Lisinopril Nifedipin Nitroglycerin Timolol Verapamil	Digitoxin Digoxin furosemide			
Miscellaneous	Alimemazin, Allopurinol, Atorvastatin,	Lansoprazole	Ranitidine Theophylline		Emepronium Oxybutinine Ipratropium

Bottom Line:

- Older adults may be more susceptible to anticholinergic effects, but cannot ignore burden of multiple co-administered anticholinergics no matter what age, especially in seriously ill patients
- There are numerous anticholinergic burden/risk scales, with differing "risk scales" for anticholinergic burden and medications included
- Utilizing Anticholinergic Activity Scale (AAS) may be helpful in determining additive risks for co-prescribed anticholinergic medications in our palliative care population as it had highest concordance with other scales in the "complex" older adult population and no scale exists specifically for seriously ill or palliative care patients
- Beware of the prescribing cascade and first determine if there are any medications that may be contributing to symptom burden because of their side effect profile that could be deprescribed

CLINICAL PEARL: Anticholinergic risk scales are not all treated equally