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### ACB scoring in the ED: easy as ABC: application of the anticholinergic burden score in ED

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#### Background

Polypharmacy (prescription of 5 or more regular medicines) is common in older adults and is associated with harm from direct side-effects and drug-drug interactions. This is particularly true for medicines with anticholinergic properties which are associated with an increased incidence of falls [1], physical functional decline [2], cognitive impairment [3], and mortality [4]. To alert prescribers to these risks a number of assessment tools exist that identify if a patient's medication may lead to increased risk of harm. It is possible that using these tools in the Emergency Department (ED) could provide an opportunity for focused medication review to avoid future harm.

#### Aims

We aimed to establish the feasibility of assessing anticholinergic burden risk using the online anticholinergic burden (ACB) tool ([www.acbcalc.com](http://www.acbcalc.com)) in patients age 65 and over in the ED.

Secondary aims were to:

- determine the prevalence of polypharmacy
- assess the severity of anticholinergic burden
- ascertain the disposition of patients determined to be high risk

#### Method

A retrospective review of available electronic patient records was carried out. Drug history for patients age 65 and over presenting to the ED was obtained for a 7-day period in June 2020. The history was taken from the patients electronic health records. Risk of potential harm from anticholinergic medicines was assessed using the ACB tool. This tool was selected as it can be completed quickly (in less than 2 minutes) and does not require specific training. It has the potential to rapidly identify at risk patients in the ED. The tool defines patients scoring  $\geq 3$  as high risk of adverse outcomes such as increased cognitive impairment and mortality.

#### Results

Of 584 records reviewed, 169 (28.93%) were excluded due to incomplete medication records.

|                   |                     |                  |
|-------------------|---------------------|------------------|
| <b>Population</b> | Records included    | 415              |
|                   | <b>Sex (female)</b> | 201 (48.43%)     |
|                   | <b>Median age</b>   | 78 (IQR = 72-84) |



The majority of patients were not at high risk of adverse effects from their medication, represented by an ACB score of less than 3. Patients with a higher ACB score were more likely to be taking 5 medicines or greater.

| ACB score                          | <3 = 317 (76.87%) | ≥ 3 = 96 (23.13%) |
|------------------------------------|-------------------|-------------------|
| Polypharmacy (taking ≥5 medicines) | 200 (62.69%)      | 95 (98.92%)       |
| Discharged from ED                 | 126 (39.49%)      | 38 (39.58%)       |

## Discussion

Determining a patient's correct current drug history especially in the older patients with polypharmacy can be challenging. Both the patient's recollection and the available clinical records may be incomplete or unavailable. Despite this using routinely available data sources we were able to ascertain the drug history in over two-thirds of patients. Application of the ACB tool was found to be quick and easy by the those using it. In this feasibility study 23.13% of the patients had a score of 3 or more putting them in the high risk group according to the tool. We discharged 40% of this high risk group. This may represent an opportunity to address high risk prescribing practise and could be used prospectively to trigger a medication review in the community. This in turn may have the potential to reduce subsequent ED attendance and admission

## Conclusion

It is feasible to apply the ACB tool in the ED. The number of patients with a complete medication record available to do this accurately was encouraging. For high risk patients discharged home there is an opportunity to develop a system of alerting General Practitioners to the need for a medication review.

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**Scan me for the ACB tool:**



## References:

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