A NOVEL ARTIFICIAL INTELLIGENCE-BASED TOOL TO ASSESS ANTICHOLINERGIC BURDEN: A SURVEY

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Background

Many medications possess anticholinergic activity. Their use is associated with a number of serious adverse effects including cognitive effects. Older people may be more susceptible to anticholinergic effects due to reduced renal and liver function (1). Professionals should assess anticholinergic burden (AChB) with the aim of reducing it. Therefore, there is a need for tools to calculate the cumulative anticholinergic effect of medications and assist professionals to identify people particularly at high risk of anticholinergic impact.

Aim(s)

Against this background, a new method of measuring anticholinergic burden was created, the International Anticholinergic Cognitive Burden Tool (IACT). The anticholinergic burden is assessed by assigning a score based on reported adverse events and aligning closely with drug chemical structure, resulting in a more accurate and up-to-date scoring system compared to the existing tools.
The tool was made available for clinicians to test its functions.
A survey was carried out to assess the overall need for an assessment tool as well as the usability of the IACT.

Results: Anticholinergic burden calculators are needed to assess anticholinergicity of medication. Currently the ACB is the most popular tool used to calculate anticholinergic burden. However, the IACT tool differentiates from the ACB and other tools as it allows to score newly added medication into the market and new information about existing medicines . The IACT, once refined, will help practitioners to standardise prescribing practice.
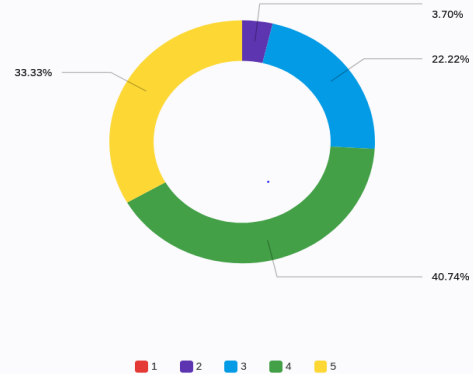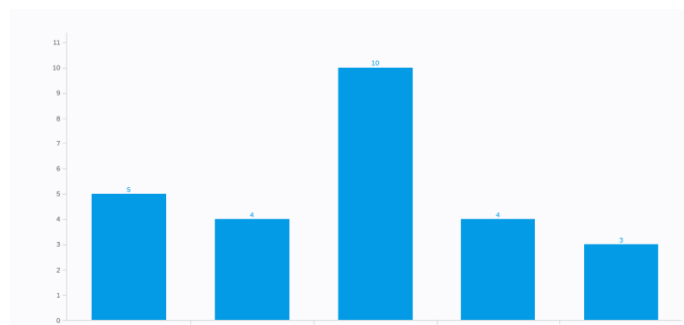

~ 33% rated any tool to assess AChB as most helpful in clinical decision making
~41 % rated any tool as somewhat helpful
(n=27)
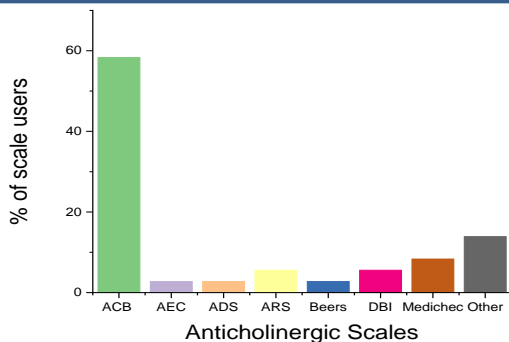
The usage of the different tools available to assess AchB

Total of 26 people tried our IACT tool and rated it against other tools. The majority rated it as 3=neither better nor worse than other existing tools.

Conclusions:

Machine learning based systems could be developed to quantify anticholinergic burden with the view of improving patient outcomes. IACT tool has the potential to help clinicians in their clinical decision around prescribing by providing an easy to access to up-to-date scoring system.

Reference: 1. Laatikainen O, Sneck S, Bloigu R, Lahtinen M, Lauri T, Turpeinen M. Hospitalizations due to adverse drug events in the elderly-a retrospective register study. Front Pharmacol 2016; 7: 358. https://doi.org/10.3389/fphar.2016.00358.

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