

Association Between Pneumonia Risk and Anticholinergic Burden Among Patients with Different Frailty Levels [Letter]

Jian Yang, Yanyan Song 

Department of Cardiovascular Surgery, General Hospital of Ningxia Medical University, Yinchuan, 750004, People's Republic of China

Correspondence: Yanyan Song, Department of Cardiovascular Surgery, General Hospital of Ningxia Medical University, No. 804 Shengli South Street, Xingqing District, Yinchuan, 750004, People's Republic of China, Email nxfysyy@163.com

Dear editor

We recently read an article entitled ‘Association between pneumonia risk and anticholinergic burden among patients with different frailty levels’, which was published in the journal of Clinical Epidemiology.¹ We are interested in the study by Avery Shuei-He Yang et al team. Their study evaluated the association between recent increase in anticholinergic burden and risk of hospitalised pneumonia at different levels of frailty.

The study enrolled patients aged over 65 years old who were hospitalised for pneumonia between 2011 and 2020, who were categorized into four groups based on the Multimorbidity Frailty Index (mFI): the fit group, mildly group, moderately group and very frail group. The primary analysis revealed that each single point increase in anticholinergic cognitive burden (ACB) scale was associated with a pneumonia risk increase by 1.35, 1.24, 1.18 and 1.12 times in the fit group, mildly group, moderately group and very frail group respectively. The study demonstrated that exposure to anticholinergics drugs was significantly associated with an increased risk of pneumonia, even in less debilitating individuals.

However, some aspects still need further discuss.

Firstly, the study used data from the Taiwan’s National Health Insurance Research Database (NHIRD). Did the inclusion criteria of patients with cognitive dysfunction and psychiatric disorders affect the results of the anticholinergic cognitive burden scale score?

Secondly, the patients included had multiple comorbidities and organ dysfunction, such as heart failure, renal failure and cerebrovascular events, which are high risk factors for hospitalized pneumonia.

Moreover, patients might also have acute illness or short-term changes in health status during the study, which might increase the use of anticholinergics or directly increase the risk of pneumonia, so was it necessary to further exclude confounding factors for conclusion verification?

Thirdly, in the study a variety of anticholinergic burden rating scales were used, such as Anticholinergic Cognitive Burden Scale (ACBS), Anticholinergic Drug Scale (ADS), Modified Anticholinergic Cognitive Burden (m-ACB), German Anticholinergic Burden Scale (GABS), and the Korean Anticholinergic Burden Scale (KABS). Although these scales have been developed and applied, there may be differences in the assignment of anticholinergic potency of drugs by different scales, and they may not be fully applicable to all populations or medical settings. Although the study compared the consistency, it did not explore the possible impact of differences between different scales on the results.²

Studies have reported that the anticholinergic cognitive burden (ACB) scale has some limitations, such as incomplete drug coverage and insufficient sensitivity to central nervous system effects.²



The research data came from Taiwan's NHIRD, Taiwan's medical system, drug prescription habits and population genetic background may be different from those of other countries and regions. Therefore, generalizability in other populations requires further validation.

Was there any correlation between the risk of pneumonia and the type, dose and duration of anticholinergic drugs? Studies had reported that treatment with β_2 -adrenoceptor agonists combined with anticholinergic drugs could improve lung function in patients with chronic obstructive pneumonia.²

It can be further discussed to pay attention to adverse drug reactions and improve rational use of drugs.

Abbreviations

ACB, anticholinergic cognitive burden; NHIRD, National Health Insurance Research Database; ADS, anticholinergic drug scale; m-ACB, modified anticholinergic cognitive burden; GABS, German anticholinergic burden scale; KABS, Korean anticholinergic burden scale.

Disclosure

The authors report no conflicts of interest in this communication.

References

1. Yang AS, Fan CHY, Tsai DH, Chuang AT, Lai EC. Association between pneumonia risk and anticholinergic burden among patients with different frailty levels. *Clin Epidemiol.* 2025;2025(17):787–796. doi:10.2147/CLEP.S524645
2. Zhang XR, Zhang XW, Ni XL. Clinical effect of β_2 -adrenoceptor agonist combined with anticholinergic drugs in patients with chronic obstructive pneumonia. *Syst Med.* 2022;7(44):88–90, 119.

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<https://doi.org/10.2147/CLEP.S605793>