The impact of benzodiazepines on occurrence of pneumonia and mortality from pneumonia: a nested case-control and survival analysis in a population-based cohort

THE USE OF BENZODIAZEPINES IS NOT ASSOCIATED WITH COMMUNITY-ACQUIRED PNEUMONIA

We read with interest the recent study done by Obiora *et al*[1] about the incidence and

Table 1 Association between benzodiazepines use and community acquired pneumonia

Windows size	Patients with pneumonia (n)	Patients using benzodiazepines (n)	Pneumonia patients using benzodiazepines (n)	OR
30 days				
January	56019	249074	765	0.46*
February	47547	232173	756	0.48*
March	52265	257621	797	0.50*
April	57348	255366	727	0.42*
May	55540	251688	756	0.47*
June	47500	235924	637	0.45*
July	48711	248732	670	0.48*
August	43891	248348	640	0.50*
September	38215	232503	561	0.48*
October	40488	246658	607	0.51*
November	40861	236880	558	0.46*
December	47187	242770	654	0.47*
60 days				
January–February	92980	361690	1376	0.64*
March–April	97463	386682	1374	0.62*
May–June	92604	366024	1245	0.61*
July–August	83055	371171	1167	0.66*
September–October	69523	358337	1043	0.67*
November–December	77999	355294	1080	0.64*
90 days				
January–March	131956	477161	2002	0.77*
April–June	135581	477107	1810	0.71*
July–September	110239	466533	1586	0.78*
October–December	106641	458760	1540	0.78*

*p<0.001.

mortality with pneumonia for benzodiazepine users verses non-benzodiazepine users. We were interested to see whether these results would be generalisable to the Taiwanese population, therefore, we used the National Health Insurance Database of 22 million (2002) population in order to investigate the association of benzodiazepines and community-acquired pneumonia (CAP). We selected window size of 1, 2 and 3 months to compute odds ratios of the diagnosis of pneumonia and presence of benzodiazepine prescription filling in all age and sex groups. We took patients having CAP identified through ICD-9-CM (480–486) codes (International Classification of Diseases, Ninth Revision, and Clinical Modification) and identified medications from their prescription using ATC (Anatomical Therapeutic Chemical) drug classification codes (N05BA01, N05BA02, N05BA06) system for benzodiazepines.

However, we found no significant association between benzodiazepines use with CAP for 30, 60 and 90 days while computing the odds ratios,[2] as shown in table 1. We checked benzodiazepines separately and in combination, but still, there was no association found for benzodiazepines being associated with CAP. Although there are not much studies about benzodiazepines in relation to pneumonia; however, added to our results, Dublin *et al*[3] found in geriatrics that there is no risk for pneumonia while using benzodiazepines. Trifirò *et al*[4] studied specifically typical and atypical antipsychotic drugs use, and risk for pneumonia in the elderly population; they also did not find any significant relationship with regard to benzodiazepines. Our result supports Dublin and Trifiro, which are contradictory to the Obiora *et al* study, that there is no significant relationship found between using benzodiazepines and having incidence risk for pneumonia.

We believe that our findings would contribute to the discussion on this topic. It is important, however, to emphasise the need for randomised controlled trials for benzodiazepines use and incidence of CAP in patients to demonstrate any causal relationship in terms of morbidity and mortality of having pneumonia while using benzodiazepines.

Usman Iqbal,[1] Shabbir Syed-Abdul,[1,2] Phung Anh Nguyen,[1,2] Wen-Shan Jian,[3] Yu-Chuan (Jack) Li[1]

[1]College of Medical Science and Technology, Taipei Medical University, Taipei, Taiwan
[2]Institute of Biomedical Informatics, National Yang Ming University, Taipei, Taiwan
[3]School of Health Care Administration, Taipei Medical University, Taipei, Taiwan

Correspondence to Yu-Chuan (Jack) Li, College of Medicine Science and Technology, Taipei Medical University, Wan Fang Hospital, 250 Wu-Hsing Street, Xinyi District, Taipei city 11031, Taiwan; jack@tmu.edu.tw

Competing interests None.

Provenance and peer review Not commissioned; internally peer reviewed.

To cite Iqbal U, Syed-Abdul S, Nguyen P A, *et al*. *Thorax* 2013;**68**:591–592.

Received 3 January 2013
Accepted 11 January 2013
Published Online First 31 January 2013

Linked

► http://dx.doi.org/10.1136/thoraxjnl-2013-203233

Thorax 2013;**68**:591–592.
doi:10.1136/thoraxjnl-2013-203211

REFERENCES

1 Obiora E, Hubbard R, Sanders RD, *et al*. The impact of benzodiazepines on occurrence of pneumonia and mortality from pneumonia: a nested case-control and survival analysis in a population-based cohort. *Thorax* 2013;68:163–70.
2 Geng L, Hamilton HJ. Interestingness measures for data mining: a survey. *ACM Comput Surv* 2006;38:9.
3 Dublin S, Walker RL, Jackson ML, *et al*. Use of opioids or benzodiazepines and risk of pneumonia in older adults: a population-based case–control study. *J Am Geriatr Soc* 2011;59:1899–907.
4 Trifirò G, Gambassi G, Sen EF, *et al*. Association of community-acquired pneumonia with antipsychotic drug use in elderly patients. *Ann Intern Med* 2010;152:418–25.