The use of benzodiazepines could be a protective factor for community-acquired pneumonia (CAP) in ≤60-year-old subjects

We have read with interest the study of Obiora *et al*[1] regarding the effect of benzodiazepines (BZs) on the risk of community-acquired pneumonia (CAP). It is concluded that the use of BZs was associated with an increased risk for CAP and CAP-related mortality. However, the effect of BZs in patients with CAP is still a matter of debate. We would like to contribute to this unsolved question, with new data from a previously published population-based case-control study carried out in a sample of 2662 subjects (1336 CAP patients and 1326 controls).[2] In fact, not only the use of BZs was not statistically associated with CAP in the overall study population, but also a protective effect for CAP was observed in the subgroup of patients aged 60 years or younger (see table 1), with an OR of 0.54 (p=0.012) in the bivariate analysis and an OR of 0.53 (95% CI 0.31 to 0.91) in the multivariate analysis after adjusting for asthma, chronic

Table 1 Effect of benzodiazepines on community-acquired pneumonia

Benzodiazepins use	Controls (n=1326)	Cases (n=1336)	p	OR (CI 95%)
Overall sample	121 (9.2%)	111 (8.3%)	0.455	0.90 (0.69 to 1.18)
≤60 years old	46 (7.0%)	26 (3.9%)	0.012	0.54 (0.33 to 0.88)
>60 years old	75 (11.5%)	85 (12.9%)	0.428	1.14 (0.82 to 1.59)
Only ≤60-year-old subjects				
Half-life				
No use of BZ	614 (93.0%)	648 (96.3%)		1
Low	4 (0.6%)	1 (0.1%)	0.024	0.24 (0.03 to 2.13)
Medium-high	42 (6.4%)	24 (3.6%)		0.54 (0.32 to 0.91)
Hypnotic power				
No use of BZ	614 (93.0%)	648 (96.3%)		1
Low	10 (1.5%)	11 (1.6%)	0.007	1.04 (0.44 to 2.47)
Medium-high	35 (5.3%)	14 (2.1%)		0.38 (0.20 to 0.71)
Miorelaxant power				
No use of BZ	614 (93.0%)	648 (96.3%)		1
Low	23 (3.5%)	14 (2.1%)	0.036	0.58 (0.29 to 1.13)
Medium-high	22 (3.3%)	11 (1.6%)		0.47 (0.23 to 0.99)
Anxyolitic power				
No use of BZ	614 (93.0%)	648 (96.3%)		1
Low	2 (0.3%)	1 (0.1%)	0.039	0.47 (0.04 to 5.24)
Medium-high	43 (6.5%)	24 (3.6%)		0.53 (0.32 to 0.88)

BZ, Benzodiazepines.

bronchitis, upper airway infection in the last month, hospitalisation in the last 5 years, temperature change, educational level and flu vaccination. In subjects older than 60 years of age, the protective effect of BZs disappeared. Only in the ≤60-year-old age group, we observed a protective effect of BZs with medium or high half-life, hypnotic, miorelaxant and anxyolitic power (see table 1). These findings were also consistent with a previous study of our group[3] and results recently reported by Iqbal *et al*.[4] The study of Obiora *et al*[1] was based on data from a large database which could have, as a main limitation, a misclassification both in disease codification and drug exposure. This misclassification could be particularly relevant in patients with CAP without radiological and follow-up confirmation of pneumonia. Strengths of our study[2] include the confirmation of CAP by two chest radiographs, the first when the diagnosis was suspected, and the second, 1 month later, as well as assessment of drug exposure by a general practitioner or a nurse at the patients' home during administration of a questionnaire. Because conclusive studies regarding the effect of BZs on the immune system are lacking, it may be suggested that BZs could act inhibiting the rapid eye movement (REM) phase of sleep, preventing bronchial aspirations associated with this phase of sleep.[5] The protective effect of BZ may disappear in older subjects with inmunosenescence and a high prevalence of comorbidities that may predispose to pneumonia (eg, oropharyngeal dysphagia). The role of BZs in CAP needs to be better studied.

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