

---

## Retrospective cohort versus case-control study - A comment on chronic obstructive pulmonary disease and low bone mass: A case-control study

---

Sir,

This is with reference to the article, 'Chronic obstructive pulmonary disease and low bone mass: A case-control study,' published in Lung India 2014;31:217-20.<sup>[1]</sup> The authors have done a commendable job to assess the prevalence of osteoporosis and osteopenia in chronic obstructive pulmonary disease (COPD) patients attending the King Fahd Hospital of the University (KFHU), Al-Khobar.<sup>[1]</sup>

However I have a few concerns regarding the methodology of this study. The authors have mentioned in the title of this study that this is a case-control study. However under the

heading, 'Patient and Methods' it has not been made clear as to how they selected the control group and segregated it from the cases.

The authors have included all patients with a diagnosis of COPD attending the Outpatient Clinic, who had a follow up of a minimum of two years during the study period and had details of forced expiratory volume in one second (FEV<sub>1</sub>), blood bone profile, bone biomarkers, and a Dual-energy X-ray absorptiometry (DEXA) scan in their medical records. However, they have failed to select the control group. They should have selected the controls from a similar population as the cases. This is further consolidated by the fact that the authors have

not calculated the odds ratio, if it was a case-control study.

The methodology followed seems to be of a retrospective cohort study, that is, retrospectively following subsets of a defined population over time and looking for differences in their outcomes and eventually calculating the relative risk (not calculated in the present study).

Had it been planned as a case-control study by the authors, they should have selected and segregated the study participants as the cases and controls. The authors had already selected the cases as per the inclusion criteria, but for the controls they should have taken the participants visiting the hospital for any other condition except COPD and should have matched them with the cases for the confounding variables like age, sex, and the specific conditions known to lower bone mass, like, malignancies, chronic renal disease, liver cirrhosis, thyroid dysfunction, history of using systemic steroids, bisphosphonate, levothyroxin, lithium, calcium, and vitamin D preparations, and so on, which could have affected the study outcome. Eventually, the odds ratio

should have been calculated to identify the association between COPD and low bone mass.

**Kanica Kaushal**

*Department of Community Medicine, Indira Gandhi Medical College, Shimla, Himachal Pradesh, India  
E-mail:kanicak8@gmail.com*

**REFERENCE**

1. Gupta RK, Ahmed SE, Al-Elq AH, Sadat-Ali M. Chronic obstructive pulmonary disease and low bone mass: A case-control study. *Lung India* 2014;31:217-20.

Access this article online	
<b>Quick Response Code:</b> 	<b>Website:</b> <a href="http://www.lungindia.com">www.lungindia.com</a>
	<b>DOI:</b> 10.4103/0970-2113.152677