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Letter to the Editor

Venerino Poletti and Claudia Ravaglia*

Methodological issues are important in cannabinoids determination in bronchoalveolar lavage

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Keywords: abuse; bronchoalveolar lavage (BAL); cannabinoids; smoking.

To the Editor,

We read with interest the paper by Rotolo et al. [1]. The lung injury determined by cannabinoids abuse represents a concern for physicians and health care authorities. Therefore, studies trying to assess the role of these substances in causing lung injury are welcomed. The authors affirm, according to the data collected and therefore analyzed, that the presence of cannabinoids in bronchoalveolar lavage (BAL) fluid could explain or could be related to the development of lung injury in cannabis smokers. However, in the study mentioned there are methodological questions that need to be addressed.

1. The time lapse between drug assumption and investigation by BAL is declared, but we do not know how these data were collected. Are they based only on the declaration of the subjects or do the authors have more solid confirmation?
2. Attempts to quantitate soluble components in BAL fluid are difficult because completely reliable denominators or reference substances are not yet available [2, 3]. As the underlying disease may alter fluid recovery, all data should be expressed by stating the volume of the instilled fluid, the volume of the recovered fluid and the percentage of the recovery. Comparison to a standard substance may be necessary if: (a) a

substance is present in the serum and also derived from local lung production; and (b) the percentage of the recovery is markedly reduced by the underlying disease. All this information appears not be included in the study. Data on the recovery rate of the fluid are not reported.

3. No mention regarding the levels (if any) of cannabinoids in blood is reported. Data on BAL cytological profiles are not considered and, lastly, data on the presence of blood cells in BAL fluid are not included in the results section.
4. Cigarette smoke may alter the alveolar-blood barrier [4] and in the paper precise data on the cigarette smoke burden (pack-years, etc.) are not mentioned.
5. Patients had different forms of lung diseases. Did patients with a diagnosis of infection have merely micro-organisms (and if so, which?) in BAL fluid or did they have a clinically documented pneumonia? Two out of 15 had a diagnosis of desquamative interstitial pneumonia (DIP), a rare disorder that here appears overrated if the patients were recruited prospectively. Other patients had multiple cysts and emphysema in the lung; cysts in the smokers' lung may be due to Langerhans cell histiocytosis and this is not clearly discussed in the paper. Finally, was BAL done in the areas of high resolution computed tomography scan documented alterations or in "normal fields"? These data are relevant because alteration/damage of the alveolar septa change significantly the permeability of the endothelial-epithelial membranes.

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