Reviewer’s report

Title: Sputum and nasal lavage lung-specific biomarkers before and after smoking cessation.

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Reviewer: Charles McSharry

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Sputum and nasal lavage lung-specific biomarkers before and after smoking cessation. Izolde Bouloukaki et al.

It is difficult to recruit a smoking quitter cohort for 12 months so this is a useful dataset.

Major Compulsory Revisions

The authors need to show
1. some evidence that their subjects complied with quitting.
2. some evidence of what effects DTT had on the mediators enough to judge whether the measured values can be trusted.

Minor Essential Revisions

The authors should comment -

This manuscript describes the effects of smoking cessation on a variety of URT anti-inflammatory and anti-microbial mediators in healthy subjects. This is an important study group and it would be useful if the authors could supply some comment on whether the subject numbers were sufficient to address their aims. Was there a reason why the authors couldn’t enroll more than 10 control subjects, at least to match the number of test subjects?

The authors found differences with healthy non-smokers at baseline but little effect of smoking cessation.

It’s not quite clear if the authors selected the 4 biomarkers as indicators of epithelial cell activation/damage, or lung anti-microbial potential or what.

Methodology:

Compliance would be crucial to this study - presumably the smokers were monitored by serial exhaled CO or cotinine concentrations?

Often smokers will show improved lung function after quitting, as another indirect assessment of compliance, was there any testing done?

Validation: It would be important that the effect of DTT as a reducing agent was assessed on the mediator immuno-reactivity in sputum. This would be better
done by testing a non-DTT treated sample with high levels before and after adding DTT, there may be a concern that internal kit standards have been stabilized somehow and don’t perform the same as native mediator.

Were there any correlations between mediator concentrations between each other and between sputum and nasal lavage?

Why is there data for only 14 subjects who managed smoking cessation at 12 months (Table 2) rather than n=22 in the abstract, and why is it that n=12 is mentioned in the discussion as the number of successful quitters?

Minor points:
Tables 3, 4 font and layout should be standardized.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
'I declare that I have no competing interests'