Reviewer's report

Title: Short-term effects of ambient particulates and gaseous pollutants on the incidence of transient ischaemic attack and minor stroke: a case-crossover study

Version: 1 Date: 21 March 2012

Reviewer: Marc Saez

Reviewer's report:

Authors try to investigate the effects on the onset of transient ischaemic attack (TIA) and minor stroke of short-term exposure to PM10 and NO, NO2, CO and SO2. I believe, however, that the authors have only partially fulfilled their objective. In fact, I have major (compulsory) and minor (essential) comments.

Major compulsory revisions

1.- Page 6. 'Environmental air quality data were obtained (...) and ozone'
   In which monitoring stations? Where are they located? Are there missing data? What percentage of missing data? How are missing data handled? Please detail

2.- Page 6. 'Data on meterological confounders (temperature and relative humidity) were obtained from the UK Meteorological Office database [21]'
   In which monitoring stations? Where are they located? Are there missing data? What percentage of missing data? How are missing data handled? Please detail

3.- Page 6. 'Four exposure lags were evaluated (...)'  
   Why four and not seven lags, for example? What was the reason to choose just four? Please detail.

   In results, only the third lag resulted statistically significant, but why not other lags beyond the four? Authors should try more lags in a new version.

4.- Pages 6 and 7. 'The analysis was conducted using a case-crossover design [22].'
   Although it is true that the particular design is explained (a bit) in page 7 ('For reported data of onset of each TIA (...) and day of the week [23].') and it seems that is bidirectional, what particular type of case-crossover design is applied? Why? What are their advantages over their alternatives? Please take a look of Figueiras et al. Epidemiology. 2005; 6(2):239-246 or Carracedo-Martínez et al. Environ Health Perspect. 2010; 118(8):1173-1182.

5.- Page 7. '(...) the effect of two pollutants was explored'
   Why not three or even more pollutants. From the results section it seems that there is an interaction between NO, NO2 and PM10. But because the
three-interaction was not tested we do not know if there exists any (for instance between NO2, PM10 and CO, seems likely)

Minor essential revisions

1.- Page 9. Results section

Please provide median and quantile, besides of mean and standard deviations (maybe the distributions were not very symmetrical in all cases).

**Level of interest:** An article of importance in its field  

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

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