**Additional file 6.** Association between long-term exposure to air pollution and first hospitalization for Alzheimer's disease. Sensitivity analyses, Rome 2001-2013

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Exposure** | **Comorbidities adjustment** | **Competing risk** | **Narrower case definition** | **Primary diagnosis** | **Non movers** |
|  | **N=9,712** | **N=9,712** | **N=2,038** | **N=4,158** | **N=6,664** |
|   | **HR1** | **95%CI** | **HR2** | **95%CI** | **HR3** | **95%CI** | **HR4** | **95%CI** | **HR5** | **95%CI** |
| PM10 \*(10µg/m3) | 0.95 | 0.91 | 0.99 | 0.95 | 0.91 | 1.00 | 0.96 | 0.87 | 1.04 | 0.94 | 0.88 | 1.00 | 0.93 | 0.89 | 0.98 |
| Coarse \*(5µg/m3) | 0.91 | 0.87 | 0.94 | 0.92 | 0.88 | 0.96 | 0.92 | 0.85 | 0.99 | 0.87 | 0.83 | 0.92 | 0.90 | 0.86 | 0.94 |
| PM2.5 \*(5µg/m3) | 0.91 | 0.85 | 0.97 | 0.93 | 0.86 | 0.99 | 0.93 | 0.82 | 1.05 | 0.89 | 0.81 | 0.97 | 0.89 | 0.83 | 0.95 |
| PM2.5 abs \*(10-5/m) | 0.91 | 0.86 | 0.96 | 0.92 | 0.87 | 0.97 | 0.93 | 0.83 | 1.02 | 0.90 | 0.83 | 0.97 | 0.91 | 0.85 | 0.96 |
| NO2 \*(10µg/m3) | 0.91 | 0.89 | 0.94 | 0.92 | 0.89 | 0.94 | 0.90 | 0.86 | 0.95 | 0.89 | 0.86 | 0.92 | 0.91 | 0.89 | 0.93 |
| NOx \*(20µg/m3) | 0.96 | 0.94 | 0.98 | 0.96 | 0.94 | 0.98 | 0.94 | 0.90 | 0.97 | 0.92 | 0.90 | 0.95 | 0.95 | 0.93 | 0.97 |
| O3 \*(10µg/m3) | 0.98 | 0.95 | 1.02 | 0.99 | 0.95 | 1.02 | 0.96 | 0.89 | 1.03 | 0.97 | 0.91 | 1.02 | 0.98 | 0.93 | 1.02 |

1 HR adjusted for age, education, place of birth, marital status, comorbidities (Chronic Obstructive Pulmonary Disease, diabetes and brain injuries), area-based socioeconomic position with baseline hazard function stratified by sex.

2 HR Models adjusted for gender, education, place of birth, marital status and area-based socioeconomic position with baseline hazard function stratified by sex, with death as competing risk.

3 HR adjusted for age, education, place of birth, marital status, area-based socioeconomic position with baseline hazard function stratified by sex. The selection of case was based on the first of at least two hospital discharges.

4 HR adjusted for age, education, place of birth, marital status, area-based socioeconomic position with baseline hazard function stratified by sex. The selection of case was based on primary diagnosis only.

5 HR adjusted for age, education, place of birth, marital status, area-based socioeconomic position with baseline hazard function stratified by sex in subject that not change residence during the follow up.