*Online supplement:*

**Material and methods**

**Detailed description concerning the analysis of the shape of the association by the use of fractional polynomials**

Although linear and quadratic polynomials are commonly used, they are often inadequate to describe the association. Fractional polynomials are an alternative to classical polynomials, but still fall within the realm of (generalized) linear methods. They extend the classical linear and quadratic model by allowing any power from a pre-defined set of values,1 typically chosen from the set (-2,-1,-1/5,0,1/5,1,2,3). From this family of models, the best functional form is chosen using Akaike’s Information Criterion.  A particular feature of the fractional polynomials is that they provide a wide class of functional forms, with only a small number of terms. Moreover, the conventional linear and quadratic polynomials are included as a subset of this extended family.

**Reference:**

1Royston P, Altman DG. Regression using fractional polynomials of continuous covariates: Parsimonious parametric modelling. Appl Statist 1994;43:429-67.

**Results**

**Analysis of the smoking habits pre and post transplant and the possible bias on the traffic related air pollution data**

Reliable data on smoking status was available in 172 subjects (70% of the total population). Among those subjects, 101 (58%) had been smokers before transplantation (median pack-years= 29; 5th-95th percentile: 4–52), and 19 (11%) resumed smoking after transplantation. Within the subgroup of 172 lung transplant patients, 62 developed BOS (36% of the subgroup), and 2 deaths occurred (1% of the subgroup).

Repeating our analyses of traffic related air pollution, only in these patients of the subgroup with reliable data on smoking confirmed the results that were obtained in the total study group of 247 patients.

Thus, the risk of BOS decreased by almost half [HR 0.53 (0.36–0.80, p=0.003)] for each log increase in distance between residence and the nearest major road, with adjustment for smoking active smoking, second hand smoke and the previously used covariates including sex, age, type of transplantation, infection (CMV and non-CMV related) rates, acute rejection rate, and SES. Excluding the 19 subjects who smoked after transplantation from the 172 subjects with data on smoking, led to hazard ratios for BOS of 0.58 (95% CI: 0.42-0.80; p<0.001) for each log increase in distance, and of 2.17 (1.43-3.29, p<0.001) for residence close to a major road (≤171 m *vs* >171 m).