

MYOCARDIAL INFARCTION INCIDENCE AND ROAD TRAFFIC NOISE EXPOSURE, PISA (ITALY), 2002-2006

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Background and Aims: Evidence is growing on association between exposure to road traffic noise and health effects, in particular cardiovascular and myocardial infarction (MI). The ongoing study aims to evaluate the association between MI incidence and residential exposure to road traffic noise by a case control (CC) study, on current data.

Methods: Mortality and hospitalization data (1998-2006) have been used to obtain cases of first MI incidence in 2002-2006 through a validated algorithm. Five controls will be matched to each case by gender, age and a deprivation index (DI), based on 2001 census. Residential address, residence length and geographical coordinates come from Municipality archives. Road traffic noise exposure have been estimated at the buildings façades from Pisa noise map built by Environmental Protection Agency of Tuscany Region according to new acoustic indicators and interim methods issued by European Directive 2009/49/CE.

Results: The CC study is ongoing. 823 MI cases (age 35+ years) have been identified in 2002-2006 with the aim to analyze also the last- residence noise exposure length.

Preliminary analyses of MI cases on residents, living in the same building (769 different buildings) on the same year, estimated incidence rates, directly standardized by age and DI, computed by sex and night noise levels (<50dB; 50-54dB; 55+ dB). The rate ratios vs the lowest noise level were 1.14 at 50-54dB, 1.33 at 55+ dB among men while were respectively 1.12 and 1.06 among women.

Conclusions: Preliminary results confirm, in men, the presence of an association between first MI occurrence and high levels of nocturnal traffic noise exposure at residence place. The ongoing CC study will consider the residence length and will try to evaluate the confounding effect of air pollution exposure by means of traffic characterization (vehicles number, pedestrian area, vicinity to airport, railway etc) in the road of residence.