

An easily ignored factor for CAN-fine particulate exposure [Letter]

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Dear editor

We read with great interest the recently published article by Vasheghani et al.¹ In the article, the authors showed that the prevalence of CAN was increased with prolonged duration of DM, but not the glycemic control level. In the study, the CAN was assessed based on heart rate variation during physical examination (at rest tachycardia and orthostatic hypotension) and standard Ewing's tests (deep-breathing and laying-to-standing tests) with bedside continuous ECG recording.

Without doubt, HRV is the popular indicator for CAN, however, there are still some influence factors, and the most easily unnoticeably one may be the air pollution or fine particles exposure. Consistent links between fine particles exposure and decreased HRV in healthy volunteers have been documented in studies.^{2,3} In their study, an increase in 30 mg/m³ of the average PM_{2.5} personal exposure in the previous 2 h decreased the pNN50 in 0.08%, which suggest short term exposure to high level of fine particles could effect the HRV or CAN.

Moreover, in the susceptible population, the individual coronary risk profiles and underlying diabetes or impaired glucose tolerance might confer reduced autonomic function of heart due to particulate air pollution exposure.⁴⁻⁶ In Vasheghani et al's study, the HRV and other tests were set standardly, however, the PM exposure of the subjects shortly before the HRV test was ignored, which might affect the conclusion if setting the level of PM as the correction factor.

Disclosure

The authors report no conflicts of interest in this communication.

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