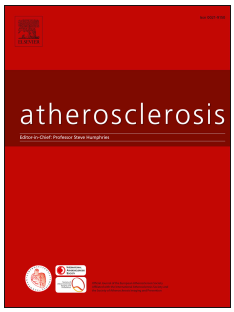
Accepted Manuscript



Endothelial progenitor cell release is usually considered a beneficial effect: Problems in interpreting the acute effects of e-cigarette use

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PII: S0021-9150(16)31537-4

DOI: 10.1016/j.atherosclerosis.2016.12.016

Reference: ATH 14907

To appear in: *Atherosclerosis*

Received Date: 11 December 2016

Accepted Date: 14 December 2016

Please cite this article as: Farsalinos KE, Polosa R, Endothelial progenitor cell release is usually considered a beneficial effect: Problems in interpreting the acute effects of e-cigarette use, *Atherosclerosis* (2017), doi: 10.1016/j.atherosclerosis.2016.12.016.

Endothelial progenitor cell release is usually considered a beneficial effect: Problems in interpreting the acute effects of e-cigarette use

Keywords: E-cigarettes; smoking; nicotine; endothelial progenitor cells; cardiovascular disease.

To the Editor,

We read with particular interest the study by Antoniewicz et al. published in *Atherosclerosis*, on the acute effects of e-cigarette use on endothelial progenitor cell (EPC) levels.[1] The authors suggest that the increase in EPCs may indicate some form of acute vascular injury. Since earlier work by the same research group showed an acute transient elevation in EPC after smoking, their interpretation of the findings after e-cigarette use is based on a similar response observed with tobacco cigarettes.[1]

However, the increase in EPC levels is largely interpreted in the scientific literature as a beneficial effect while a reduction is interpreted as an adverse prognostic marker. Several risk factors for cardiovascular disease, such as ageing, hyperlipidemia, hypertension, obesity and diabetes, are associated with reduced levels and functional impairment of EPCs.[2] Similar associations were found with "non-classic" risk factors such as high C-reactive protein and homocysteine, and low vitamin D levels.[2] Smokers have lower levels of EPCs compared to non-smokers.[3]

Various short-term or acute interventions are associated with elevated EPCs. Consumption of red wine, switching to Mediterranean diet and acute exercise are associated with elevated number of circulating EPCs in healthy subjects.[4-6] EPCs increase shortly after smoking cessation (especially in light smokers), with nicotine patch users having slightly higher (but not statistically