

Serveur Académique Lausannois SERVAL serval.unil.ch

Author Manuscript

Faculty of Biology and Medicine Publication

This paper has been peer-reviewed but does not include the final publisher proof-corrections or journal pagination.

Published in final edited form as:

Title: Response to Tomoyuki Kawada, MD: Smoking, Systolic Blood Pressure, Fasting Plasma Glucose and Progression of Carotid Atherosclerosis.

Authors: Zingg S, Collet TH, Rodondi N

Journal: Nicotine and tobacco research : official journal of the Society for Research on Nicotine and Tobacco

Year: 2016 Jul

Issue: 18

Volume: 7

Pages: 1681

DOI: 10.1093/ntr/ntw027

In the absence of a copyright statement, users should assume that standard copyright protection applies, unless the article contains an explicit statement to the contrary. In case of doubt, contact the journal publisher to verify the copyright status of an article.

Response to Tomoyuki Kawada, M.D.: „Smoking, systolic blood pressure, fasting plasma glucose and progression of carotid atherosclerosis“

Sarah Zingg^a, Tinh-Hai Collet^{a,b}, Nicolas Rodondi^c

^a Department of Ambulatory Care and Community Medicine, Lausanne University Hospital, Switzerland

^b Service of Endocrinology, Diabetes and Metabolism, Lausanne University Hospital, Switzerland

^c Department of General Internal Medicine, Inselspital, University of Bern, Switzerland

Running title: Progression of carotid atherosclerosis, smoking cessation, fasting plasma glucose and systolic blood pressure in smokers

544 words including text and 6 references

Corresponding author:

Prof. Nicolas Rodondi, MD, MAS, Department of General Internal Medicine

Inselhospital, University of Bern, 3010 Bern, Switzerland

Email: Nicolas.Rodondi@insel.ch

Phone: +41 (31) 632 41 63, Fax: +41 (31) 632 88 85

Key words: carotid atherosclerosis, smoking cessation, fasting plasma glucose, systolic blood pressure

We would like to thank Dr Tomoyuki Kawada for his thoughtful comments on our recent article¹.

In the main analysis of the CAROSS trial², a smoking cessation trial assessing ultrasonographic visualisation of carotid plaques as a potential motivational intervention, we found a smoking cessation rate of 20% after 1 year, in both the intervention and control arms², which is in line with other smoking cessation trials³. Our recent article is a secondary analysis of the intervention group (n=267 at inclusion) with an extended follow-up of 3 years, including a carotid ultrasound.

We agree with Dr Kawada that our study does not have enough statistical power to demonstrate a definite influence of smoking cessation and/or relapse on carotid intima-media thickness (CIMT) progression. A higher number of participants as well as a longer follow-up would be needed to demonstrate its impact on CIMT. Therefore, restricting our analysis to data between the 1-year and 3-year time points (i.e. 2 years' worth of data, n=208) instead of the complete dataset over 3 years of follow-up (n=276) would have led to even less statistical power and relevant information.

We used carotid ultrasound in the CAROSS trial² to let smokers visualize the impact of cigarette smoking on their arteries. We did not aim at assessing the nature of carotid plaques but focused on their presence vs. absence, using the commonly accepted method of the Rotterdam Study⁴ and recommended by the US Task Force⁵. Additionally, we measured CIMT at one specific site within the carotid arteries⁶ to obtain a precise outcome for detection of more subtle changes during follow-up.

We found that baseline fasting blood glucose seemed to have a significant negative association with 3-year CIMT progression in our study ($p=0.03$), but it was likely a chance finding, as we found no association with baseline and 1-year CIMT. Furthermore, no time-dependent follow-up of fasting blood glucose was implemented.

In summary, our analysis including data of the complete 3-year follow-up allowed us to identify increased blood pressure as a risk factor on CIMT progression in smokers.

References

1. Zingg S, Collet T-H, Locatelli I, et al. Associations Between Cardiovascular Risk Factors, Inflammation, and Progression of Carotid Atherosclerosis Among Smokers. *Nicotine Tob Res.* 2015;1–6. doi:10.1093/ntr/ntv255.
2. Rodondi N, Collet T-H, Nanchen D, et al. Impact of carotid plaque screening on smoking cessation and other cardiovascular risk factors: a randomized controlled trial. *Arch Intern Med.* 2012;172(4):344–52. doi:10.1001/archinternmed.2011.1326.
3. Schroeder S a. What to do with a patient who smokes. *Jama.* 2005;294(4):482–7. doi:10.1001/jama.294.4.482.
4. van der Meer IM, Bots ML, Hofman A, del Sol AI, van der Kuip D a M, Witteman JCM. Predictive value of noninvasive measures of atherosclerosis for incident myocardial infarction: the Rotterdam Study. *Circulation.* 2004;109(9):1089–94.

doi:10.1161/01.CIR.0000120708.59903.1B.

5. Redberg RF, Vogel RA, Criqui MH, Herrington DM, Lima JA., Roman MJ. Task force #3—
what is the spectrum of current and emerging techniques for the noninvasive
measurement of atherosclerosis? *J Am Coll Cardiol*. 2003;41(11):1886–1898.
doi:10.1016/S0735-1097(03)00360-7.

6. Touboul P-J, Hennerici MG, Meairs S, et al. Mannheim carotid intima-media thickness
and plaque consensus (2004-2006-2011). An update on behalf of the advisory board of
the 3rd, 4th and 5th watching the risk symposia, at the 13th, 15th and 20th European
Stroke Conferences, Mannheim, Germany, 2004, B. *Cerebrovasc Dis*. 2012;34(4):290–6.
doi:10.1159/000343145.