



Letters to the Editor

The “obesity-mortality paradox” phenomenon among Asian patients following percutaneous coronary artery intervention



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Obesity-mortality paradox

We read with the interest with the work by Dr Kaneko and colleagues that revealed the “obesity-mortality paradox” among Japanese patients with coronary artery disease undergoing percutaneous coronary artery intervention (PCI) between 2004 and 2010 [1]. As we know, previous reports observed that the obesity-mortality paradox was mainly present in patients receiving PCI in short-term results. In contrast, some reports raised a controversy with regard to the long-term impact of body mass index (BMI) on mortality. Accordingly, we made a meta-analysis and found a J-shaped relationship between BMI and total mortality among patients with PCI followed up for longer than 5 years [2]. We found that the long-term neutralized risk in total mortality for the obesity category ($\text{BMI} \geq 30 \text{ kg/m}^2$) may result from increased cardiac mortality. Moreover, there was relatively lower long-term risk of myocardial infarction in obese patients, and the excess of cardiac deaths should come from those who survived heart failure and died more than 5 years later. In our opinion, the authors could further analyze their patients who survived shorter or longer than the median of 3 years to see the relationship between BMI and mortality.

In addition, the obesity-mortality paradox was initially described in the bare-metal stent era before 2003 when most of the registries were carried out in the western world.

In the drug-eluting stent-era, we confirmed the obesity-mortality paradox gradually attenuated among patients receiving PCI in a meta-analysis [3]. For Asian populations, there were two large-sized PCI cohorts conducted and followed up longer than 2 years respectively in the drug-eluting stent era. In China, Wang et al. analyzed a cohort of 4972 patients treated with drug-eluting stents and the results showed that patients with overweight ($\text{BMI} 25\text{--}29.9 \text{ kg/m}^2$) and obesity ($\text{BMI} \geq 30 \text{ kg/m}^2$) did not have survival benefit compared to those with normal weight ($\text{BMI} 18.5\text{--}24.9 \text{ kg/m}^2$) [4]. In contrast, Park et al. reported the presence of obesity-mortality paradox in a 12,093 Korean PCI cohort with 82% of patients using drug-eluting stents [5]. Since drug-eluting stents were found to affect the obesity-mortality paradox phenomenon, the authors should clarify the use of drug-eluting stents in this Japanese cohort and examine the relation of BMI to mortality in patients with or without drug-eluting stents.

References

- [1] Kaneko H, Yajima J, Oikawa Y, Tanaka S, Fukamachi D, Suzuki S, Sagara K, Otsuka T, Matsuno S, Funada R, Kano H, Uejima T, Koike A, Nagashima K, Kirigaya H, et al. Obesity paradox in Japanese patients after percutaneous coronary intervention: an observation cohort study. *J Cardiol* 2013;62:18–24.
- [2] Li YH, Lin GM, Lin CL, Wang JH, Han CL. Relation of body mass index to mortality among patients with percutaneous coronary intervention longer than 5 years follow-up: a meta-analysis. *Int J Cardiol* 2013 May 9. <http://dx.doi.org/10.1016/j.ijcard.2013.04.174>, pii: S0167-5273(13)00841-3. [Epub ahead of print].
- [3] Lin GM, Li YH, Lin CL, Wang JH, Han CL. Relation of body mass index to mortality among patients with percutaneous coronary intervention in the drug-eluting stent era: a systematic review and meta-analysis. *Int J Cardiol* 2013 July 23. <http://dx.doi.org/10.1016/j.ijcard.2013.06.144> [Epub ahead of print].
- [4] Wang ZJ, Zhou YJ, Liu YY, Yu M, Shi DM, Zhao YX, Guo YH, Cheng WJ, Nie B, Ge HL, Jia DA, Yang SW, Yan ZX. Obesity and cardiovascular thrombotic events in patients undergoing percutaneous coronary intervention with drug-eluting stents. *Heart* 2009;95:1587–92.
- [5] Park DW, Kim YH, Yun SC, Ahn JM, Lee JY, Kim WJ, Kang SJ, Lee SW, Lee CW, Park SW, Park SJ. Association of body mass index with major cardiovascular events and with mortality after percutaneous coronary intervention. *Circ Cardiovasc Interv* 2013;6:146–53.

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