International Journal of Cardiology 281 (2019) 156

Contents lists available at ScienceDirect

International Journal of Cardiology

journal homepage: www.elsevier.com/locate/ijcard

Letter to the editor

Preoperative CT scan for postoperative stroke prediction in minimally invasive mitral valve surgery: Statistical concern for clinical factors in regression analyses

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ARTICLE INFO

Article history:
Received 30 December 2018
Received in revised form 9 January 2019
Accepted 16 January 2019

Keywords:
CT
Stroke
Minimally invasive mitral valve surgery
Clinical factors
Regression analysis

Dear Editor,

We read with great interest the paper by Leonard et al. [1] online published in *IJC* in Dec 12, 2018. They included 57 articles (19 CT versus 38 non-CT) with a total of 13,731 patients in the pooled analysis, and tried to identify the potential influential clinical factors of stroke occurrence following minimally invasive mitral valve surgery (MIMVS). Finally, 10 clinical factors (age, female gender, CAD, hypertension, non-CT screening, etc.) have been found to be with significant importance for the incidence of stroke using univariate mete-regression analyses.

Exploration of the potential sources of significant heterogeneity is a very important process for the clinical inconsistency among the included studies in meta-analysis. In the exception of subgroup analysis, meta-regression analysis is also a regular method [2]. To reduce the possibility of overfitting in the regression model, at least five studies or substudies were set for the identification of every one influential factor [3–5]. In this study, a total of 57 studies could theoretically identify at least 10 factors (up to 57/5 = 11.4) in a relative stable regression model. Nevertheless, they only did univariate regression analyses without subsequent multivariate regression processes for the 10 potential meaningful factors. Hence, we suggest an ignored multivariate regression analyses with 2–3 influential factors every one time to furtherly confirm the main confounding factors, which will provide more solid and informative evidence for the clinical practice in this meta-analysis.

Conflict of interest

None declared.

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https://doi.org/10.1016/j.ijcard.2019.01.059
0167-5273/