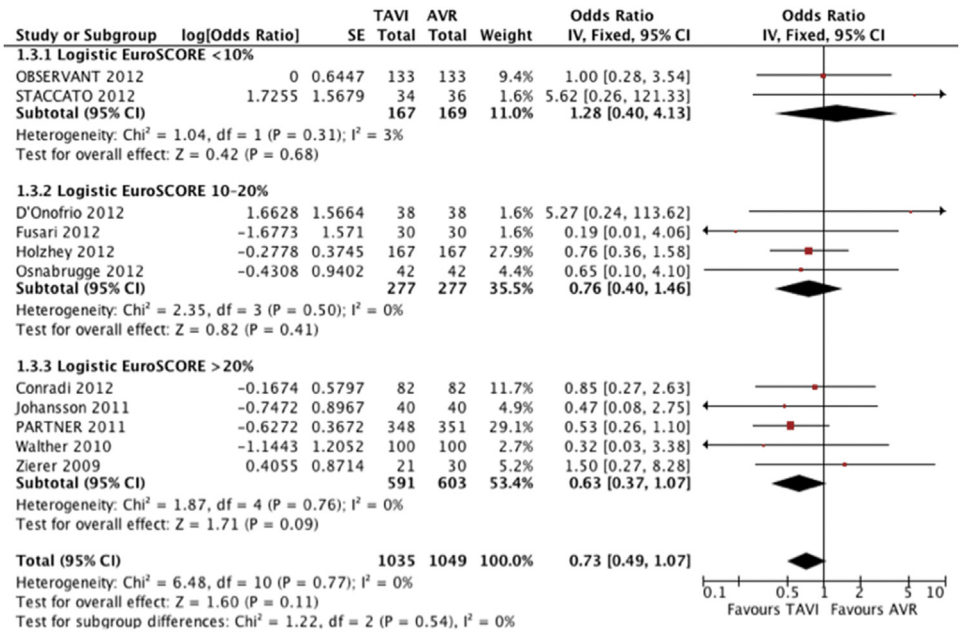

Fig 1. Logistic European System for Cardiac Operative Risk Evaluation (EuroSCORE) stratified meta-analysis of early all-cause mortality among patients with aortic stenosis assigned to transcatheter aortic valve implantation (TAVI) versus surgical aortic valve replacement (AVR). (CI = confidence interval; IV = inverse variance.)

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Therapeutic Options Against Internal Thoracic Artery Spasm

To the Editor:

We have read the study by Watanabe and colleagues [1] with great interest. The authors present important findings that could improve graft patency and the outcomes of coronary artery bypass grafting. In this study, Fasudil provides a marked vasodilation and an increased graft free flow. We have some questions for the authors. First, how did they determine the sample size? We think that these results could be more impressive and satisfactory with a larger sample size. On the other hand, preprocedural graft free flow was considered relatively low compared with our practice and some previous studies [2]. Were the study groups composed of patients with low graft free flow?

As you know, the dose or concentration of papaverine solution is not well established and generally depends on institutional preferences. How did the authors design the composition of papaverine and fasudil solution? Did they consider establishing a dose-dependent relationship between drugs and graft free flow?

Biologic in vitro half-life ($T_{1/2}$) of papaverine is approximately 100 min, but it is less than 30 min for intravenous administration of fasudil [3]. Papaverine can prevent graft spasm throughout an operation, but fasudil could not maintain its preventive effect after 30 min. In this sense, the efficacy of oral fasudil against graft spasm may be an interesting topic for investigators.

Fasudil increases nitric oxide activity indirectly. We investigated the relationship between nebivolol and perivascular nitric oxide synthase activity and graft free flow. In accordance with the encouraging results of this preliminary study, we replaced our former beta-blocker management with the nebivolol, and we decided to continue this clinical trial.

In conclusion, Watanabe's study reveals an encouraging novel therapeutic option in cardiac surgery, but further study is necessary with a larger sample size and comparing different administration methods and doses.

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