



## Correspondence

**Comment on 'A Systematic Review of the Role of Cardiopulmonary Exercise Testing in Vascular Surgery'**

Dear Editor,

We read with interest the article by Young *et al.* and value their contribution to this area of clinical practice.<sup>1</sup> We too are of the opinion that more research in this area would be invaluable. However, we are some what surprised regarding the assertion that cardiopulmonary exercise testing (CPET) not be used out of a research environment.

We agree that CPET should not be used simply to permit or deny patients surgery but would suggest its value lies in identifying those in whom endovascular aneurysm repair (EVAR) may be a safer alternative. The suggestion that decision making is solely based on a series of measured numbers such as the anaerobic threshold or VO<sub>2</sub> max is incorrect. It forms a part of a comprehensive assessment by both surgeon and anaesthetist prior to any decision on subsequent management.

Although the review has highlighted the paucity of data and limitations of CPET the deficiencies of other risk stratification methods suggested in the article have not been mentioned. Indeed if existing methods were satisfactory then CPET would not be gaining such popularity as an assessment tool. The Revised Cardiac Risk Index (RCRI) has consistently been shown to perform poorly in vascular patients.<sup>2</sup> Echocardiography has not been shown to have any value in predicting outcome and is not included in current guidelines for routine preoperative evaluation.<sup>3</sup> Despite this, it is still commonly utilised by clinicians exemplifying the discrepancy between available data and clinical practice.

The authors mention that CPET is not included in current guidelines for perioperative evaluation before AAA repair. We would draw the authors attention to the AAA Quality Improvement Program (QIP) guidance which does give mention of the utility of CPET but does not mention RCRI, dobutamine stress echocardiography or biochemical markers.<sup>4</sup>

We feel it is premature to limit the promising utility of CPET on the basis of this review.

**References**

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**Reply to 'Comment on a Systematic Review of the Role of Cardiopulmonary Exercise Testing in Vascular Surgery'**

Dear Editor,

We are grateful for the interest in our systematic review from Timbrell *et al.*, who suggest that the value of CPET may lie in identifying those in whom endovascular aneurysm repair (EVAR) may be a safer alternative for patients with abdominal aortic aneurysm (AAA). We disagree with this assertion, as available data increasingly suggest that aneurysm morphology, rather than patient physiology or comorbidity, is the stronger predictor of long-term outcome from EVAR.<sup>1–4</sup> Early physiological scoring systems for open AAA repair perform with reduced accuracy in patients selected for open repair in the endovascular era.<sup>5</sup> While ongoing research has demonstrated the comparative utility of newer scoring systems for predicting the outcome of open AAA repair in contemporary practice,<sup>6</sup> no such evidence currently exists for CPET. We therefore reiterate the conclusion that the role of CPET in determining whether patients should undergo open repair, EVAR, or conservative management of AAA, requires investigation in a formal research environment, with appropriate safeguards for patient safety.

We appreciate that CPET has its enthusiasts, but if its value is to be better recognised and understood in vascular patients, then its use must be investigated through well-designed research. If units

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