

## Exercise Blood Pressure Response, Albuminuria and Arterial Stiffness in Hypertension

### The Reply:

We thank Bouzas-Mosquera et al for their interest in our work.<sup>1</sup> They suggest that there is still controversy over the prognostic significance of hypertensive response to exercise. To support this, they refer to the previous works by Lauer et al<sup>2</sup> (mean follow-up of 2 years) and Gupta et al<sup>3</sup> (mean follow-up of 6.6 years), in which only a fraction of participants had hypertension (26.6-48.1%). Subjects were on cardiovascular drugs, and those without a hypertensive response exhibited higher frequency of prior coronary events, thus confounding the results. In contrast, Mundal et al<sup>4</sup> addressed the same question in a 1999 cohort of apparently untreated healthy men after a mean follow-up of 16 years, excluding those with prior history of cardiovascular and other systemic disease, and concluded that exercise blood pressure was a stronger predictor of morbidity and mortality from myocardial infarction than casual blood pressure.

Along the same lines, others have shown that exercise blood pressure test data in combination with conventional risk factors improved coronary heart disease risk assessment.<sup>5</sup> Focusing on hypertension, according to the American Heart Association Statement on Exercise Standards for Testing and Training, an exaggerated blood pressure response is associated with future cardiovascular mortality.<sup>6</sup>

Finally, most studies in patients with ischemic heart disease and in hypertensives<sup>7</sup> showed satisfactory and better blood pressure reproducibility during stress than rest, in contrast to the work stated by Bouzas-Mosquera, which

presented the limitation of long time intervals (1-5 years) between consecutive tests.

In conclusion, the majority of data suggest that exercise blood pressure response is a reliable clinical tool to predict adverse outcome in hypertensives. The association of exercise blood pressure with albuminuria that was shown in our study<sup>1</sup> provides a potential pathophysiological link between a hypertensive response to exercise and cardiovascular risk.

Costas Tsioufis, MD, PhD  
Kyriakos Dimitriadis, MD  
Christodoulos Stefanadis, MD, PhD  
*First Cardiology Clinic  
University of Athens  
Hippokraton Hospital  
Athens, Greece*

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