

THE EUROPEAN CARDIOLOGIST - JOURNAL BY FAX

Authors: E. AGABITI-ROSEI - J. ALDERSHVILE - G. AMBROSIO - L. BADIMON - JP. BASSAND - A. BAYÉS DE LUNA - M.E. BERTRAND - E. CHAZOV - S. CHIERCHIA - J. CLELAND - D. CLEMENT - D. COKKINOS - J.M. DETRY - R. DIETZ - P. DOMINIAC - I. EDES - R. FERREIRA - H.R. FIGULLA - W. FLAMENG - I. GRAHAM - W. JANUSZEWICZ - J.C. KASKI - P. KEARNEY - W. KLEIN - F. KOLBEL - M. KOMAJDA - W. KÜBLER - T. LÜSCHER - G. MANCIA - W.J. MCKENNA - T. MEINERTZ - J. MLCZUCH - D. MULCAHY - E. O'BRIEN - A. OTO - J. PAPP - W.J. PAULUS - J. POLONIA - I. PRÉDA - L.A. PROVIDENCIA - J. REID - W.J. REMME - W. RUZYLLLO - Z. SADOWSKI - P. SERRUYS - P. SLEIGHT - J. SOLER-SOLER - J. SOMERVILLE - P.G. STEG - H.A.J. STRUIJKER BOUDIER - B. SWYNGHEDAUW - L. TAVAZZI - M. TENDERA - K. THYGESEN - P. TOUTOUZAS - A. VAHANIAN - J.L. VANOVERSCHELDE - C.A. VISSER - J. WIDIMSKY - M. YACOUB - P. ZARCO

CAN DRUG-INDUCED HYPOTENSION CAUSE MYOCARDIAL ISCHEMIC EVENTS?

Hypotension may occur in patients with ischemic heart disease (IHD) taking antianginal and heart failure drug treatment. It can be postulated that anginal episodes might be related to extremes of hypotension in these patients. We assessed this hypothesis in the following study.¹

Twenty-five patients with angiographically documented IHD, who were either awaiting definitive medical or surgical revascularization or deemed unsuitable for these procedures, were selected, provided they also had symptoms of angina pectoris despite medical therapy, and demonstrated clinical hypotension, with either a clinic or a ward-measured pressure showing persistent readings below 100 mm Hg systolic or 65 mm Hg diastolic, or ambulatory blood pressure (ABP) monitoring showing hypotensive events below 100 mm Hg systolic and/or 65 mm Hg diastolic during the day, or below 90 mm Hg systolic and/or 50 mm Hg diastolic during the night. In addition, patients had to be taking one or more hypotensive cardiovascular drugs.

All patients had a resting ECG, echocardiography, ABP monitoring, and Holter monitoring performed. Hypotension-induced ischemic (HII) events were defined as episodes of ST-segment ischemia occurring at least 1 minute after an ABP measurement below 100 mm Hg systolic/65 mm Hg diastolic during the day, or 90 mm Hg systolic/50 mm Hg diastolic at night.

One hundred and seven hypotensive events were documented. Forty episodes of ST-segment ischemia occurred in 14 patients, of which 25% were symptomatic. Fourteen HII events occurred in 8 patients, 13 of which were preceded by a fall in diastolic pressure, and 6 by a fall in systolic pressure ($P < 0.001$). The episodes of ST-segment ischemia were significantly associated with receding hypotensive events ($P < 0.0001$), and patients with HII events were more frequently on multiple hypotensive drug regimens.

It may be concluded, therefore, that, in patients with IHD and hypotension, symptomatic and silent ischemia occurred in a temporally causal relationship with hypotension, particularly for diastolic pressures, suggesting that patients with coronary disease may be susceptible to ischemic events incurred as a result of low blood pressure due to excessive hypotensive drug treatment.

The clinical relevance of these findings is that a growing number of patients with IHD are treated with multiple drug regimens of antianginal and anti-heart failure medication, either prior to definitive revascularization interventions, or in the context of inoperable coronary disease, and virtually all of these drugs can cause hypotension. The tendency in such patients with troublesome anginal symptoms is to add more antianginal medication, which carries, of course, the potential for further blood pressure reduction. This opens the concept of the overtreatment of patients with IHD as a pathologically important factor in the management of these patients. †

E. O'BRIEN and P. OWENS
Dublin, Ireland

Reference: 1. Owens P, O'Brien E. Hypotension in patients with coronary disease—can profound hypotensive events cause myocardial ischaemic events? *Heart*. 1999;82:477-481.