

## A Provocative Interpretation of the Case Control Analysis

Many commentators have pointed out that selection or indication bias is an unavoidable foible of case control, retrospective analytic methodology. Most of those critical of the Psaty et al retrospective case control study<sup>1</sup> (see "Calcium Channel Blockers in Cardiology 1995: An Overview," page S5) have maintained that the selection bias factor meant simply that the patients for whom calcium channel blockers were prescribed (for the most part, the older types of calcium channel blockers, which are not approved as antihypertensive therapy) were sicker to begin with. No doubt that was why the physicians prescribed the more potent calcium channel blockers and, concurrently, why patients were from the outset at greater risk for complications such as MI.

This line of reasoning was taken a step further by Lennart Hansson, MD, in remarks made during a panel discussion at the EMCA conference. Referring to the table published by Psaty et al showing the comparability of the cases and control groups with respect to a number of variables, Dr. Hansson noted the good match for age, racial composition, diastolic blood pressure, and certain other factors.

With respect to many other factors, however, there were statistically significant differences between the cases group and the control group. In the cases group, the number of men were fewer, systolic blood pressure was higher (by about 5 mm Hg), blood cholesterol was

higher (252 versus 235 mg/dL) blood glucose was higher, the percentage of smokers was higher (26% versus 13%), and more patients had diabetes (27.9% versus 13.3%) and angina pectoris (28% versus 14%). Nearly 50% more patients in the cases group had intermittent claudication. The number of patients in the cases group who had undergone prior peripheral vascular surgery or coronary artery bypass grafting was double that in the control group. In total, almost twice as many patients in the cases group as in the control group had some type of cardiovascular disorder.

"I asked my statisticians to do some calculations on this," Dr. Hansson said. "It is, of course, very difficult to come up with a fixed number, but they said that the most conservative estimate would be that the risk of suffering an MI was at least 300% to 400% higher in the cases group than in the control group.

"Therefore, the finding of Psaty et al of only a 60% increase in risk (16 per 1,000 in patients taking a calcium channel blocker versus 10 per 1,000 for those taking a diuretic or beta-blocker) suggests to me that treatment with a calcium channel blocker was highly beneficial."

### ... REFERENCES ...

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