British Journal of Pharmacology (2008) 155, 1163

0007–1188/08 $32.00
www.brjpharmacol.org

CORRESPONDENCE

Importance of serum high-density lipoprotein levels to aortic valvular disease

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British Journal of Pharmacology (2008) **155,** 1163; doi:10.1038/bjp.2008.348; published online 1 September 2008

We read the article by Busseuil *et al.* (2008) with great interest. In their study, they examined the beneficial effects of infusions of apolipoprotein A-I mimetic peptide on the regression of aortic valve stenosis (AVS) in rabbits. They found that aortic valve area increased and aortic valve thickness decreased significantly in the treatment group after 14 days of treatment. The authors emphasized that therapies based on increasing high-density lipoprotein (HDL) could transform the treatment strategy of this disease and there was a need for further studies in patients to support their results in animals.

We can provide some of this support from the results of a small retrospective study (Yilmaz *et al.*, 2004). Here, we evaluated the lipid profile and previous echocardiographic findings of 42 patients with aortic stenosis. We classified our patients by the annual rate of progression of peak aortic gradient into two groups, those with an annual rate $\geqslant 10$ mm Hg per year and those with rates <10 mm Hg per year. The first group was denoted as 'fast progressors' ($n=16$) and the second group as 'slow progressors' ($n=26$). The annual rate of progression in the fast progressors was significantly higher than that in the slow progressors, both in peak and mean gradients (12 ± 2 vs 6.4 ± 1.6 mm Hg and 9 ± 1.3 vs 5.2 ± 1.1 mm Hg; $P<0.001$ for both). There was a highly significant difference between groups in the ratio of total cholesterol/HDL cholesterol (fast progressors, 7.1 ± 1.4 vs slow progressors, 5.2 ± 1.3; $P<0.001$). Furthermore, there was a significant correlation between the annual rate of progression in peak aortic gradients and the total cholesterol/HDL cholesterol ratio ($r=0.399$, $P=0.009$). Total cholesterol/HDL cholesterol ratio was an independent (from coronary artery disease and smoking) predictor of annual progression rate ($P=0.004$, beta: 1.98). Across the whole study group, mean total cholesterol levels were not very high, whereas the HDL cholesterol levels were low, a finding typical of the Turkish population in general. Nevertheless, another of our findings, crucially supportive for Busseuil *et al.*'s proposal, was that the mean HDL level was significantly lower in the fast progressors, than in the slow progressors (30 ± 3 vs 34 ± 4; $P=0.007$). Hence, the main determinant of the difference in the ratio was the level of HDL cholesterol.

In the light of Busseuil *et al.*'s results and of ours, we suggest that as much consideration should be given to HDL cholesterol as to low-density lipoprotein (LDL) cholesterol and to the possible benefit, in this context, of increasing HDL, as well as lowering LDL, cholesterol. In a recent, randomized clinical trial (Cowell *et al.*, 2005), no correlation was found between the decrease in LDL cholesterol and the progression of aortic valvular disease. We emphasized the importance of HDL cholesterol in another letter (Yilmaz, 2007), addressing a paper written by Moura *et al.* (2007), which presented the beneficial effects of rosuvastatin on slowing the progression of AVS. Both trials (Cowell *et al.*, 2005; Moura *et al.*, 2007) seemed to omit HDL cholesterol levels in their analysis. However, the difference between the two studies could result from the differential effects of two different statins on HDL cholesterol levels.

A carefully balanced treatment of lipid levels, aiming not only to decrease LDL but also to increase HDL cholesterol, might well provide significant results for the progression of aortic stenosis. This is why we would strongly support Busseuil *et al.*'s call for full-scale randomized clinical trials of HDL-based therapies in aortic valvular stenosis.

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