Dear Sir,

I read with interest the report by Takeichi et al. [1] on the relationship between left atrial function and plasma levels of atrial natriuretic peptide in patients with various types of heart disease. I would like to make three comments.

First, the term atrial natriuretic factor (ANF) is preferable to the term atrial natriuretic peptide (ANP). Whereas most early information on atrial peptides came from in vitro and animal experimentation, there is now sizeable literature on ANF in man thanks to the development of methods to measure plasma ANF levels (using radioimmunoassays or radioreceptor assays), and the availability of pure synthetic ANF for injection or infusion [2]. Therefore, a nomenclature committee suggested that the global term ANF be used, with a note of inclusive amino acid numbers when referred to a specific atrial peptide [2].

Second, the terms ‘atrial pressure’ and ‘atrial volume’ should not be used interchangeably. Although increased atrial pressure is frequently associated with increased atrial size, e.g. chronic mitral regurgitation, the two are not necessarily synonymous [3]. In long-standing mitral regurgitation with a giant left atrium and increased left atrial compliance, the left atrial pressure may sometimes be normal [4]. On the other hand, in acute mitral regurgitation due to rupture of chordae tendineae, the left atrial pressure, especially the V wave, is often markedly elevated without concomitant left atrial dilatation [5]. Similarly, in some patients with mitral valve prolapse, ANF is elevated [6]. Here it is the increased left atrial pressure resulting from mitral valve billowing and prolapse with or without mitral regurgitation that triggers the increased plasma level of ANF [7].

Third, stretching of the atrial wall by increased atrial volume or pressure is a well-documented stimulus for the release of ANF [8]. The process obviously occurs in both the right and left atrium. However, the study by Ross et al. [9] comparing the ANF concentration in the right ventricle and the femoral vein in children with congenital heart disease seems to indicate that right atrial size plays an important role in the secretion of ANF. They found no correlation between left atrial area and ANF levels. Matsuoka et al. [10], however, have found that increased ANF levels correlated better with enlargement of the left atrium than of the right atrium. They observed that, in 50 patients with congenital heart disease, the ANF levels in plasma were significantly higher in children with ventricular septal defect or patent ductus arteriosus than in those with atrial septal defect. As a matter of fact, the highest values of ANF in the study group reported by Ross et al. [9] were also in those with ventricular septal defect. Thus, the issue of relative importance of left versus right atrial size or pressure obviously has not been settled yet, at least in patients with congenital heart disease.

References