Plasma ANP and systolic function in myocardial infarction

Dr Korup et al. reported an interesting study in acute myocardial infarction, concluding that there is a significant correlation between plasma ANP and systolic function, whereas there was no corresponding relationship between plasma ANP and diastolic function[1].

We reported[2-3] the same correlations between ANP and systolic function indexes, and between ANP and left ventricular diastolic volumes/m², all assessed by echocardiography. However, the lack of correlation between atrial dimension and ANP in the study of Korup et al. is not totally convincing, even taking into account the table data presented[1], which show a fair positive correlation; moreover we[2], and others[4], quite often find weak correlations between LAD/m² and ANP; perhaps it would have been better had Dr Korup's group used indexed LAD to correlate with ANP.

In addition, a significant correlation between ANP and diastolic measurements, notably E/A ratio, is observed in congestive heart failure[5], and the clinical improvement is associated both with a decrease in the abnormality of diastolic echocardiographic measurements and with the decrease of ANP[6].

A correlation between ANP and heart rate, which we reported in sinus rhythm patients, both in the control groups and in congestive heart failure, but not in patients with chronic atrial fibrillation[7], was not observed in the study of Korup et al[1]. If patients with arrhythmias had been included, the correlation between heart rate and ANP may have been lacking in groups of patients considered globally.

Finally, an additional point should be taken into account, that of the close positive relationship present in many studies, and in the study by Korup et al[1] between age and ANP. This can affect the final results in many ways, particularly in groups with a wide age range[3,5].

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References

A reply

The main purpose of our study was to relate systolic and diastolic echocardiographic parameters to ANP. Interestingly, however, Drs Trovato and Carpinteri discuss how heart rate, left atrial diameter and age relate to ANP. Revising our data we find a positive correlation between ANP and left atrial diameter (r=0.49; P<0.01), indexed left atrial diameter (r=0.51; P<0.01) and age (r=0.42; P<0.05).

We find no correlation between heart rate and ANP (r=0.24; P>0.10). All our patients were in sinus rhythm at the time of examination.

In a univariate analysis there is a negative correlation between age and end-systolic volume index (r=0.53; P<0.01). This prompted us to perform a multivariate analysis to elucidate which parameter is most strongly related to ANP. The multivariate analysis included the end-systolic volume index, the indexed left atrial diameter and age and showed that the end-systolic volume index (P<0.005) and the indexed left atrial diameter (P<0.01) are independently related to ANP, whereas age is not (P>0.42).

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Left atrial thrombus in heart transplant recipients

We read with interest the article by Derumeaux et al[1] concerning the incidence, predictive criteria and diagnosis of atrial thrombus after heart transplantation. In this excellent report it is suggested that transoesophageal echocardiography is the procedure of choice in the evaluation of spontaneous echocardiographic and atrial clots, and routine follow-up transoesophageal echocardiography is advised in all heart transplant recipients 6 months after surgery. In addition, it is proposed that total orthotopic heart transplantation with caval anastomosis may be useful to prevent thrombi formation.

We have previously reported our experience on the incidence, etiology, diagnosis and management of intracardiac thrombi after heart transplantation[2] and have suggested that atrial fibrillation of the recipient atrial component could contribute to the formation of thrombi. We recommended transoesophageal echocardiography in all transplant recipients during the first 3 months after surgery, because in our experience this is the time at which the risk of thrombus formation is greatest. Regarding treatment, we have proposed the use of acenocoumarol (international normalized ratio 2:5 to 3). After 3 to 6 months, we repeat the transoesophageal echocardiogram, and if the thrombus has disappeared or has diminished significantly in size we exchange acenocoumarol with ticlopidine. In relation to the measures proposed to prevent thrombi formation after transplantation, a previous report has shown that bicaval orthotopic heart transplantation does not avoid thrombi formation[3].

We would ask Derumeaux et al. the following questions: Did they find any relationship between recipient atrial rhythm and the presence of atrial thrombus? Why is routine echocardiography recommended 6 months after surgery instead of after 35 months, which is the average time postsurgery when thrombi are diagnosed? What kind of anticoagulant and dose is recommended and for how