

Unusual aspects of valvular heart disease – the role of noninvasive imaging methods

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Abstract

More than 100 million people around the world suffer from valvular heart diseases (VHD). We observe changes in the etiological spectrum in well developed countries. The number of post-rheumatic diseases diminishes, while there is an increased number of patients diagnosed with degenerative VHD, in particular with aortic stenosis (AS). The observed increase of VHD, in particular secondary etiology of VHD, is also connected with an improved treatment of heart failure. Less frequently, the VHD can result from unusual mechanisms, in particular regurgitation VHD developed on both native and artificial valves.

This work concentrates on the VHD which developed more or less due to iatrogenic mechanism. A special attention is paid to noninvasive imaging methods used for VHD diagnoses, their prediction and prevention. These diseases developed as a result of drug therapy which can induce valvulopathy or they can appear as a complication of transcatheter aortic valve replacement (TAVI) with patients with AS.

In the first part of this work, possible effects of Pergolide is described. Pergolide – an agonist of dopamine receptors- used in the treatment of Parkinson disease (PD) can contribute to the development of restrictive VHDs. We examined a group of 90 patients treated with Pergolide and did not find any case of restrictive VHD and pulmonary hypertension in our PD patients treated with pergolide on daily doses around 3 mg. In addition, compared to the testing group we did not observe any significant differences in echocardiographic parameters, such as tenting area (TA) and tenting distance (TD), predicting the development of restrictive valvular heart diseases. This conclusion justifies a relative safety of Pergolide with respect to the development of restrictive valvular disease when used with moderate doses.

In the second part we focus on the aortic regurgitation which developed after TAVI. The occurrence of AR in our group of 96 patients was comparable to data published elsewhere. The parameters of aortic annulus and ascending aorta predicted a larger postprocedural AR. Nevertheless during one year follow-up, the patients with AR after TAVI did not show significant differences in ejection fraction as compared to the patients without AR. In addition we did not find a significant difference in functional class between these two groups.