Pulmonary Hypertension and Venous Thrombo-embolic Disease

RIGHT VENTRICULAR DYSFUNCTION IN PATIENTS WITH EXERCISE-INDUCED PULMONARY HYPERTENSION ASSOCIATED WITH CONNECTIVE TISSUE DISEASE

Poster Contributions
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Background: Exercise-induced PH (EIPH) has been believed to be an early stage of overt pulmonary hypertension (PH). We assessed whether right ventricular function already deteriorated or not in EIPH patients with connective tissue disease (CTD)

Methods: One hundred sixty-seven patients with CTD without overt PH were recruited in this study. Pulmonary artery systolic pressure (PASP) was estimated before and immediately after 6-minute walk by Doppler echocardiography. EIPH was defined as PASP>45 mmHg after 6-minute walk.

Results: Three patients were excluded from this study because of undetectable tricuspid regurgitation after the exercise. Twenty-eight patients in 164 patients (16.7%) were diagnosed as EIPH. Since mean age in the EIPH group was significantly greater than the non-EIPH group, we performed age-matched comparison between two groups. The PASP at baseline and change in PASP by exercise were greater in the EIPH group than the non-EIPH group, respectively. There was no significant difference in tricuspid annular plane systolic excursion between the two groups, however peak systolic (s') and peak early diastolic velocity (e') of tricuspid annular motion velocities (TAM) were significantly lower in the EIPH group than the non-EIPH group (see table), respectively.

		EIPH (n=28)	Non-EIPH (n=102)	p value
Age	(year-old)	62±11	62±10	ns
Gender	(male/female)	2/26	17/85	
PASP baseline	(mmHg)	31.1±4.5	26.4±3.9	p<0.001
PASP after exercise	(mmHg)	50.0±4.2	34.2±6.1	p<0.001
SPO2 baseline	(%)	97.5±1.2	97.2±1.6	p=0.215
SPO2 after exercise	(%)	95.0±4.5	96.4±2.5	p=0.061
TAM-s'	(cm/s)	10.5±2.1	11.5±1.8	p=0.024
TAM-e'	(cm/s)	9.0±3.4	10.3±3.1	p=0.040
TAM-a'	(cm/s)	13.0±2.8	13.7±2.8	p=0.124

Conclusion: Right ventricular dysfunction was observed in patients with EIPH, ie. the very early stage of PH. The TAM-s' and TAM-e' could be sensitive indices to assess the right ventricular dysfunction in patients with CTD.