

EC3

Effect of Age on Normal Ranges of Pulmonary Artery Pressure at Peak Treadmill Exercise

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Background: Treadmill stress echocardiography (TSE) is frequently used for the assessment of dyspnea on exertion. This study sought to explore the effect of age on the normal ranges of pulmonary artery pressure at peak treadmill exercise.

Methods: Patients referred for TSE to rule out ischemia or for the evaluation of dyspnea on exertion underwent measurement of the right ventricular:right atrial (RV:RA) gradient pre and post exercise. RA pressure was estimated at 5mmHg. Patients with moderate or greater stenotic or regurgitant valvular disease, baseline wall motion abnormalities or studies positive for inducible ischemia were excluded from the analysis.

Results: 128 patients met criteria and underwent TSE with pre and post measurement of RV:RA gradient. Pre-study RV:RA gradient was not be obtained in 18 patients (14%) and post study RV:RA gradient was not obtained in 23 patients (18%). Estimated PA pressure pre and post exercise according to decade of life is presented in the table below.

Conclusions: Resting and peak pulmonary artery pressure can be measured in the majority of patients referred for TSE. Estimated peak PA pressure >40mmHg in non-trained patients under 70, and >49mmHg in patients 70 and over should be considered abnormal.

Ages	All	<40	40-49	50-59	60-69	70+
N	128	6	30	31	36	25
Males	70	2	17	16	22	13
METS	11+3	12.5+13	12.7+2.4	11.9+3.0	10.3+2.4	8.8+4
%Peak HR	94+11	91+7	95+7	95+14	95+12	92+13
Peak SBP	156+19	141+10	154+19	156+22	160+21	156+17
Resting PA	27+6	22+4	25+6	26+6	27+4	31+6
Exercise PA	34+12	29+8	30+9	31+10	34+11	44+12
Range at Peak Exercise	14-77	20-42	23-57	14-57	17-58	25-77
increment	8+9	7+6	5+6	6+7	8+9	13+10
95 percentile	57	40	33	35	38	49