TABLE E1 Haemodynamic and gas exchange parameters at baseline, during exercise, at second baseline and after saline fluid challenge in the entire group of patients (n=49, all with PAOP ≤15)

	Baseline 1 (45°)	**Maximal exercise**	**Delta 1**	**Baseline 2 (supine)**	**Fluid challenge**	**Delta 2**	**Delta 1 vs 2, p value**
Heart rate, RR, power							
HR beats·min^{-1}	70 (60; 79)	95 (81; 107)	25 (17; 33)	70 (62; 81)	70 (60; 80)	−1 (−3; 2)	<0.001
RR_{sys} mmHg	147 (125; 171)	173 (153; 195)	22 (16; 35)	141 (127; 159)	139 (125; 163)	0 (−4; 6)	<0.001
RR_{mean} mmHg	98 (88; 112)	113 (96; 126)	11 (4; 21)	97 (83; 108)	97 (87; 108)	2 (−1; 5)	<0.001
RR_{dia} mmHg	72 (67; 80)	79 (67; 87)	5 (−1; 11)	71 (64; 77)	71 (63; 76)	−1 (−3; 4)	0.002
Work watts		25 (25; 50)					
Gas exchange							
VO_2 mL·min^{-1}	241 (198; 347) (n=43)	695 (592; 865) (n=36)	427 (324; 615) (n=36)	248 (213; 295) (n=42)	250 (236; 288) (n=38)	0 (−19; 22) (n=38)	<0.001
VO_2 % peak[#]		68.6 (56.1; 77.4) (n=34)					
VE/VCO_2	43.6 (38.2; 51.7) (n=31)	42.8 (37.2; 56.8) (n=28)	−0.6 (−3.7; 6.1) (n=28)	44.7 (37.7; 54.3) (n=26)	45.4 (36.6; 52.4) (n=22)	−0.9 (−1.9; 0.5) (n=22)	0.452
$p_{ET}CO_2$ mmHg	25.8 (22.3; 28.7) (n=30)	26.4 (21.5; 31.2) (n=28)	0.5 (−2.2; 1.9) (n=27)	24.0 (22.1; 27.6) (n=26)	23.8 (22.4; 27.2) (n=22)	−0.04 (−1.7; 0.6) (n=22)	0.430
O_2 pulse mL	3.5 (3.0; 4.7) (n=43)	7.4 (5.9; 9.9) (n=36)	4.1 (2.4; 5.2) (n=36)	3.6 (3.0; 4.2) (n=42)	3.6 (3.0; 4.4) (n=38)	−0.1 (−0.3; 0.3) (n=38)	<0.001
p_aO_2 mmHg	73.5 (58.1; 80.2) (n=47)	65.1 (49.5; 80.0) (n=46)	−7.9 (−13.2; 1.6) (n=44)	78.9 (58.1; 89.0) (n=43)	76.0 (61.7; 87.6) (n=44)	0 (−3.5; 2.4) (n=41)	<0.001
p_aCO_2 mmHg	36.4 (32.1; 40.1) (n=47)	34.4 (31.6; 38.8) (n=46)	−0.2 (−2.5; 2.4) (n=44)	34.9 (31.3; 37.8) (n=43)	34.5 (31.3; 38.2) (n=44)	0.2 (−0.5; 1.1) (n=41)	0.353
Pressures and cardiac output							
PAP_{sys} mmHg	45 (32; 70)	76 (56; 104)	27 (15; 37)	44 (33; 71)	50 (42; 80)	6 (0; 10)	<0.001
PAP_m mmHg	27 (19; 40)	48 (30; 64)	14 (9; 23)	26 (19; 42)	31 (26; 46)	3 (1; 7)	<0.001
PAP_{dia} mmHg	17 (11; 25)	27 (18; 35)	7 (4; 12)	17 (10; 24)	17 (13; 27)	1 (−1; 4)	<0.001
RAP mmHg	6 (4; 9)	12 (7; 14) (n=48)	5 (2; 8) (n=48)	6 (4; 9)	9 (7; 12)	3 (2; 4)	0.006
PAOP mmHg	10 (9; 12)	17 (13; 20)	6 (3; 10)	10 (8; 13)	15 (13; 18)	5 (3; 7)	0.192

TPG mmHg	17 (9; 29) (n=48)	30 (15; 42)	8 (3; 14) (n=48)	16 (10; 29)	14 (10; 30)	0 (−3; 2)	<0.001
DTPG mmHg	8 (3; 15) (n=46)	8 (3; 14)	1 (−3; 5) (n=46)	7 (2; 14) (n=48)	4 (−3; 11)	−2 (−6; −1) (n=48)	<0.001
Cardiac index (Fick) $L \cdot min^{-1} \cdot m^{-2}$	2.6 (2.1; 3.5) (n=42)	4.4 (3.5; 5.6) (n=36)	1.3 (0.6; 2.3) (n=35)	2.9 (2.4; 3.9) (n=39)	3.1 (2.5; 4.5) (n=35)	−0.1 (−0.3; 0.1) (n=33)	<0.001
Cardiac index (thermodilution) $L \cdot min^{-1} \cdot m^{-2}$	2.5 (2.1; 3.0) (n=47)	4.0 (3.4; 5.0) (n=45)	1.6 (1.0; 2.2) (n=45)	2.8 (2.3; 3.3) (n=45)	3.1 (2.7; 3.7) (n=46)	0.4 (0.2; 0.7) (n=45)	<0.001
CO (Fick) $L \cdot min^{-1}$	5.0 (3.8; 6.6) (n=42)	8.2 (6.3; 10.2) (n=36)	2.5 (1.0; 4.4) (n=35)	5.2 (4.3; 6.8) (n=39)	6.0 (4.4; 7.9) (n=35)	0.2 (−0.2; 0.7) (n=33)	<0.001
CO (thermodilution) $L \cdot min^{-1}$	4.4 (3.8; 5.6) (n=47)	7.1 (6.3; 8.9) (n=45)	3.0 (2.0; 4.0) (n=45)	5.1 (4.1; 5.9) (n=45)	5.8 (4.8; 6.7) (n=46)	0.8 (0.3; 1.1) (n=45)	<0.001
SV mL	65.5 (52.6; 81.0) (n=47)	75.8 (63.6; 107.5) (n=45)	14.6 (4.0; 21.5) (n=45)	69.9 (54.4; 84.9) (n=45)	79.7 (65.6; 100.7) (n=46)	11.9 (4.5; 19.1) (n=45)	0.560
Resistances							
TPVR WU	6.0 (4.1; 10.0) (n=47)	5.6 (3.6; 9.8) (n=45)	−0.3 (−1.0; 0.4) (n=45)	5.1 (3.7; 9.3) (n=45)	5.2 (4.3; 8.4) (n=45)	0.3 (−0.5; 0.7) (n=44)	0.051
PVR (Fick) WU	4.4 (1.6; 7.0) (n=42)	2.9 (1.5; 7.7) (n=36)	−0.2 (−1.1; 0.5) (n=35)	3.7 (1.8; 7.5) (n=39)	3.3 (1.8; 7.2) (n=35)	−0.3 (−0.9; 0.3) (n=33)	0.234
PVR (thermodilution) WU	3.76 (2.20; 7.03) (n=47)	3.13 (1.77; 6.69) (n=45)	−0.21 (−0.75; 0.17) (n=45)	3.30 (2.07; 7.06) (n=45)	2.84 (1.63; 5.56) (n=46)	−0.56 (−1.12; −0.02) (n=45)	0.334
SVR (Fick) WU	18.12 (13.22; 23.23) (n=42)	12.90 (8.96; 16.53) (n=36)	−4.98 (−7.22; −1.85) (n=35)	16.02 (11.35; 21.95) (n=39)	14.45 (10.08; 20.82) (n=35)	−0.72 (−1.75; 0.83) (n=33)	<0.001
SVR (thermodilution) WU	20.42 (15.76; 28.27) (n=47)	14.11 (10.16; 17.62) (n=45)	−7.66 (−11.27; −4.22) (n=45)	16.88 (14.25; 24.60) (n=45)	15.08 (12.00; 21.11) (n=46)	−2.32 (−3.70; −0.75) (n=45)	<0.001

Data are presented as median (interquartile range).

[#]Peak VO_2 was determined 3–5 days beforehand in a bicycle exercise test according to a modified Jones protocol [15].

CO: cardiac output; DTPG: diastolic transpulmonary pressure gradient; HR: heart rate; O_2 pulse: quotient of VO_2 and heart rate; p_aCO_2: arterial partial pressure of carbon dioxide; p_aO_2: arterial partial pressure of oxygen; PAOP: pulmonary artery occlusion pressure; PAP_{dia}: diastolic pulmonary artery pressure; PAP_m: mean pulmonary artery pressure; PAP_{sys}: systolic pulmonary artery pressure; $p_{ET}CO_2$: end tidal pressure of

carbon dioxide; PVR: pulmonary vascular resistance; RAP: right atrial pressure; RR_{dia}: diastolic blood pressure; RR_{mean}: mean blood pressure; RR_{sys}: systolic blood pressure; SV: stroke volume; SVR: systemic vascular resistance; TPG: transpulmonary pressure gradient; TPVR: total pulmonary vascular resistance; VE/VCO_2: relation of ventilation to carbon dioxide output; VO_2: ventilatory oxygen uptake ; WU: Wood Units.

TABLE E2. Haemodynamic parameters at baseline, during exercise and after saline fluid challenge in the subgroup of patients with pulmonary hypertension (combined PAP_m ≥25 mmHg and PAOP ≤15 mmHg; n=26)

	Baseline 1 (45°)	**Maximal exercise**	**Delta 1**	**Baseline 2 (supine)**	**Fluid challenge**	**Delta 2**	**Delta 1 vs 2, p value**
Heart rate, RR, power							
HR beats·min^{-1}	72 (60; 79)	98 (81; 106)	24 (17; 33)	70 (61; 81)	72 (59; 82)	−1 (−3; 2)	<0.001
RR_{sys} mmHg	139 (123; 167)	165 (145; 193)	21 (16; 35)	142 (121; 160)	142 (124; 161)	−1 (−5; 4)	<0.001
RR_{mean} mmHg	97 (88; 108)	108 (91; 121)	11 (3; 21)	97 (82; 105)	98 (87; 107)	2 (−4; 4)	<0.001
RR_{dia} mmHg	71 (65; 80)	80 (65; 87)	5 (1; 11)	71 (64; 77)	72 (62; 76)	−2 (−4; 3)	0.001
VO_2 mL/min	241 (213; 347) (n=25)	664 (571; 770) (n=19)	385 (303; 465) (n=19)	250 (230; 305) (n=25)	261 (239; 304) (n=23)	0 (−25; 25) (n=23)	<0.001
Work watts		25 (25; 50)					
Gas exchange							

	Baseline 1 (45°)	**Maximal exercise**	**Delta 1**	**Baseline 2 (supine)**	**Fluid challenge**	**Delta 2**	**Delta 1 vs 2, p value**
VO_2 % peak[#]		70.7 (63.5; 82.5) (n=18)					
VE/VCO_2	43.3 (40.4; 54.1) (n=18)	55.7 (44.2; 59.5) (n=16)	4.6 (0; 9.2) (n=16)	45.1 (41.8; 56.9) (n=17)	46.2 (36.6; 53.2) (n=14)	−1.0 (−1.9; 0.5) (n=14)	0.012
$p_{ET}CO_2$ mmHg	24.8 (22.3; 28.5) (n=18)	22.4 (18.8; 26.1) (n=16)	−1.3 (−5.5; 1.1) (n=16)	24.0 (22.1; 27.6) (n=17)	23.0 (22.2; 27.2) (n=14)	−0.4 (−1.7; 0.7) (n=14)	0.622
O_2 pulse mL	3.6 (3.1; 4.7) (n=25)	7.4 (5.8; 8.3) (n=19)	3.4 (1.9; 4.4) (n=19)	3.7 (3.1; 4.4) (n=25)	3.6 (3.0; 4.4) (n=23)	−0.1 (−0.3; 0.4) (n=23)	<0.001
p_aO_2 mmHg	61.6 (54.3; 75.3 (n=25)	50.8 (45.0; 66.0) (n=23)	−9.4 (−13.9; −0.9) (n=22)	62.1 (57.6; 78.9) (n=25)	63.6 (54.4; 82.4) (n=25)	−0.1 (−2.5; 2.9) (n=24)	<0.001
p_aCO_2 mmHg	35.4 (32.1; 37.6) (n=25)	32.0 (29.3; 36.9) (n=23)	−0.6 (−4.0; 0.5) (n=22)	34.3 (30.5; 36.5) (n=25)	33.8 (29.9; 37.3) (n=25)	−0.1 (−0.5; 0.9) (n=24)	0.139

	Baseline 1 (45°)	**Maximal exercise**	**Delta 1**	**Baseline 2 (supine)**	**Fluid challenge**	**Delta 2**	**Delta 1 vs 2, p value**
Pressures and cardiac output							
PAP_{sys} mmHg	70 (53; 85)	104 (87; 117)	33 (24; 44)	69 (53; 92)	80 (55; 91)	1 (−2; 6)	<0.001
PAP_{m} mmHg	40 (32; 54)	61 (52; 70)	18 (13; 24)	41 (33; 50)	31 (33; 53)	2 (0; 5)	<0.001
PAP_{dia} mmHg	25 (20; 31)	35 (30; 44)	10 (4; 14)	24 (21; 31)	26 (21; 32)	0 (−2; 3)	<0.001
RAP mmHg	7 (5; 10)	13 (11; 18)	7 (3; 9)	7 (4; 13)	10 (7; 15)	3 (2; 4)	<0.001
PAOP mmHg	11 (10; 13)	19 (16; 21)	7 (5; 10)	12 (9−14)	15 (13; 18)	5 (1; 6)	0.011
TPG mmHg	28 (22; 43)	41 (36; 52)	13 (4; 18)	29 (21; 41)	29 (21; 37)	−3 (−5; 1)	<0.001
DTPG mmHg	13 (8; 19)	14 (11; 27)	1 (−4; 9)	13 (8; 19)	11 (5; 16)	−3 (−6; 0)	0.004
Cardiac index (Fick) $L \cdot min^{-1} \cdot m^{-2}$	2.4 (2.1; 2.8) (n=24)	3.8 (3.0; 5.6) (n=19)	1.1 (0.6; 1.6) (n=18)	2.7 (2.4; 3.1) (n=24)	3.0 (2.3; 3.8) (n=22)	−0.1 (−0.2; 0.1) (n=21)	<0.001

	Baseline 1 (45°)	**Maximal exercise**	**Delta 1**	**Baseline 2 (supine)**	**Fluid challenge**	**Delta 2**	**Delta 1 vs 2, p value**
Cardiac index (thermodilution) $L \cdot min^{-1} \cdot m^{-2}$	2.3 (2.1; 3.0) (n=25)	3.8 (2.8; 4.8) (n=23)	1.5 (0.9; 1.2) (n=23)	2.7 (2.1; 3.1) (n=25)	2.9 (2.4; 3.6) (n=25)	0.3 (0.1; 0.6) (n=25)	<0.001
CO (Fick) $L \cdot min^{-1}$	4.2 (3.8; 5.4) (n=24)	6.8 (5.4; 9.2) (n=19)	2.2 (0.9; 2.6) (n=18)	4.9 (4.3; 6.0) (n=24)	5.5 (4.0; 6.9) (n=22)	0.2 (−0.1; 0.4) (n=21)	0.002
CO (thermodilution) $L \cdot min^{-1}$	4.5 (3.5; 5.8) (n=25)	6.9 (5.0; 9.0) (n=23)	2.8 (1.2; 3.5) (n=23)	5.5 (3.6; 6.1) (n=25)	5.4 (4.1; 6.7) (n=25)	0.6 (0.2; 1.1) (n=25)	<0.001
SV mL	65.5 (53.0; 81.0) (n=25)	74.2 (47.3; 115.4) (n=23)	8.0 (−2.4; 18.1) (n=23)	66.2 (50.8; 83.9) (n=25)	79.0 (54.9; 95.1) (n=25)	11.2 (0.6; 21.4) (n=25)	0.555
Resistances							
TPVR WU	9.9 (6.6; 12.8) (n=25)	9.5 (5.6; 13.6) (n=23)	−0.5 (−1.6; 0.7) (n=23)	9.1 (6.0; 13.2) (n=25)	8.3 (5.4; 11.1) (n=24)	−0.4 (−2.0; 0.5) (n=24)	0.695

	Baseline 1 (45°)	**Maximal exercise**	**Delta 1**	**Baseline 2 (supine)**	**Fluid challenge**	**Delta 2**	**Delta 1 vs 2, p value**
PVR (Fick) WU**Resistances**	6.2 (4.5; 10.8) (n=24)	6.3 (3.0; 8.9) (n=19)	−0.5 (−2.1; 0.9) (n=18)	5.4 (4.0; 10.0) (n=24)	5.6 (3.3; 7.9) (n=22)	−0.5 (−1.5; 0.2) (n=21)	0.459
PVR (thermodilution) WU	6.3 (4.6; 9.9) (n=25)	6.3 (3.4; 9.6) (n=23)	−0.4 (−1.2; 0.2) (n=23)	6.7 (4.1; 9.2) (n=25)	5.2 (3.3; 7.1) (n=25)	−1.0 (−2.4; −0.3) (n=25)	0.342
SVR (Fick) WU	18.8 (13.0; 24.3) (n=24)	13.8 (9.1; 16.1) (n=19)	−5.0 (−7.1; −1.9) (n=18)	17.8 (13.1; 22.0) (n=24)	15.8 (12.1; 21.1) (n=22)	−0.8 (−1.8; 0.8) (n=21)	0.003
SVR (thermodilution) WU	17.9 (15.4; 24.9) (n=25)	12.9 (10.2; 17.6) (n=23)	−7.3 (−11.3; −2.4) (n=23)	16.9 (14.3; 24.2) (n=25)	15.1 (12.0; 20.7) (n=25)	−2.7 (−4.2; −0.4) (n=25)	<0.001

Data are presented as median (interquartile range).

[#]Peak VO_2 was determined 3–5 days beforehand in a bicycle exercise test according to a modified Jones protocol.

CO: cardiac output; DTPG: diastolic transpulmonary pressure gradient; HR: heart rate; O_2 pulse: quotient of VO_2 and heart rate; p_aCO_2: arterial partial pressure of carbon dioxide; p_aO_2: arterial partial pressure of oxygen; PAOP: pulmonary artery occlusion pressure; PAP_{dia}: diastolic pulmonary artery pressure; PAP_m: mean pulmonary artery pressure; PAP_{sys}: systolic pulmonary artery pressure; $p_{ET}CO_2$: end tidal pressure of

carbon dioxide; PVR: pulmonary vascular resistance; RAP: right atrial pressure; RR_{dia}: diastolic blood pressure; RR_{mean}: mean blood pressure; RR_{sys}: systolic blood pressure; SV: stroke volume; SVR: systemic vascular resistance; TPG: transpulmonary pressure gradient; TPVR: total pulmonary vascular resistance; VE/VCO_2: relation of ventilation to carbon dioxide output; VO_2: oxygen consumption; WU: Wood Units

Table E3. Echocardiographic data grouped by PAWP increase.

Number (cons.)	**Gender (f/m)**	**Age (years)**	**BMI (kg/m²)**	**PAP_m (mmHg)**	**CAD (1/2/3/-)**	**Diabetes (In/O/-)**	**Hyper-tension**	**E/A**	**e' (cm/s)**	**E/e'**	**LA (cm^2)**	**LADs (mm)**	**LV-hypertrophy**	**MR (degree)**	**TR (any)**	**TAPSE (mm)**	**PE**
no increase in PAWP >20 mmHg at exercise or >18 mmHg after i.v. fluid																	
1	f	55	25.8	55	-	-	-	0.4	6	5.2	14		-	0	y	16	n
5	f	76	15.7	15	-	-	y	1.1	6	9		28	-	0.5	y	19	n
7	f	41	19.6	54	-	-	-	0.93	16	3.3		33	-	0	y	13	n
10	f	77	22.7	22	1	-	y		n.d.	n.d.	14		-	1	n		n
11	f	78	20.99	39	-	-	y	0.6	6	6.8		26	-	0.5	y	14	n
12	f	70	28.6	17	-	-	y	AF	7.7	21.9			-	1.5	y	20	n

14	m	65	20.74	20	-	In	y	0.8	9.1	14.9	21		y	0.5	n	36	n
17	f	70	20.5	48	-	-	-	0.7	7	11	20	35	-	0.5	y	24	y
19	f	76	22.59	11	-	-	-	0.7	7	9		40	-	0.5	y	25	n
20	f	57	22.3	20	-	-	-	1.2	11.1	6.4	22		-	1	n	29	y
21	f	78	22.22	61	2	In	y	0.7	6.7	7		38	-	0	y	15	n
22	f	53	26.6	9	-	-	y	0.7	4	22.1		38	-	2	y		n
23	f	56	25	15	-	-	y	1.4	11.5	6.7		28	-	0.5	y	25	n
24	m	75	24.6	56	-	-	y	0.68	16	4.6	16	36	-	0	y	28	n
25	f	28	20.6	19	-	-	-	1.6	22	3.3	16		-	0	y	20	n
30	m	82	21.47	23	2	-	y	0.5	4	14.2	22	34	-	0	n	29	n
31	f	78	23.25	17	1	In	y	fusion	7	13.1	29		y	1	y	21	n

32	f	62	25	32	-	-	y	1.2	12	8.9		39	y	1	y	24	n
33	m	50	26.9	17	-	-	-	0.9	11	5.6		35	-	0	n	24	n
34	f	57	33.84	19	-	-	-	1.4	6.8	11		40	-	0	y	28	n
35	f	61	18.56	40	-	-	y	1.0	6	14	24		-	0.5	y	20	y
36	f	70	19.1	22	-	-	-	0.7	6.5	6.8		31	-	0	y	24	n
37	f	54	17.21	23	-	-	-	0.7	9.9	5.4	14		-	0	y	27	n
38	f	54	34.94	37	-	In	y	0.7	24	3.5	25		-	0	y	28	n
39	m	77	27.03	50	-	-	y	0.7	7	8	21		y	0	y	28	n
40	f	30	28.4	34	1	-	-	1.4	20.3	4.2	26		y	2	y	22	n
41	m	48	27.2	30	-	-	y	0.9	9	6	30		-	0	n	21	n
43	m	76	28.4	52	2	In	y	fusion	5	4		40	-	0	y	17	n

44	f	71	20.57	18	-	-	y	fusion	10	11	23		-	1	y	29	n
45	m	65	26.1	41	-	-	-	0.7	12.7	3.1	22	34	-	0	y	22	y
46	f	80	17.17	28	-	-	y	0.5	n.d.	8	10		y	0	y	18	n
47	f	53	32.5	58	-	-	y	0.8	9	8.4	25	40	y	0	y	12	n
PAWP increase at exercise only																	
49	f	67	14.84	21	-	-	y	0.7	8.9	7.1		32	-	0.5	n	20	n
2	f	70	26.6	32	-	-	y	AF			27	43		0	y	15	n
8	m	79	22.4	30	1	-	y	0.7	8.68	6	26	45	-	0.5	y	25	n
9	m	79	22.9	32	3	-	y	AF	5.9	10	43		-	3	y	11	n
13	f	74	18.3	19	-	-	y	AF	6.8	11	31	42	-	2	y	22	n
29	f	78	22	48	2	O	y	1.3	7.7	12.9	25		y	0	y	17	n

42	f	75	22.06	23	-	In	y	1.3	13	6.5		47	-	0.5	y	29	n
PAWP increase after i.v. fluid only																	
3	m	71	26.6	20	1	In	y	AF	11	7	50		y	1	y	14	y
4	m	63	26.7	46	3	-	y	0.8	10	5		37	-	0.5	y	9	n
6	f	67	19	54	-	In	y	0.5	3	16		30	-	0	y	14	y
15	f	68	30.5	57	-	-	y	0.7	12	10		31	-	0.5	y	19	n
18	f	52	34.41	14	-	In	-	1.1	10	11			-	0	n		n
27	f	58	44.55	28	-	-	y	0.6	12	4	23	46	-	0	n	22	n
48	f	64	24.4	15	-	-	y	1.3	13	6.6	26	45	-	0.5	y	23	n
PAWP increase at exercise and after i.v.fluid																	
16	f	78	21.56	23	-	-	y	1.4	9	10	22	34	-	2	y	29	n

26	m	78	22.12	27	1	-	y	0.57	11	3.9		53	y	0.5	y	20	n
28	f	54	32	37	-	-	y	0.6				47	-	0	n	20	n

AF atrial fibrillation, BMI body mass index, CAD coronary artery disease (1/2/3 denotes one-, two-, three- vessel disease), cons. consecutively, E early (ventricular) transmitral diastolic velocity, E/A early to late (atrial) transmitral diastolic velocity ratio, e' tissue Doppler mitral annular early diastolic velocity, E/e' ratio of transmitral to mitral annular early diastolic velocity, f female, In Insulin, i.v. intravenous, LADs systolic left atrial diameter, LA left atrial area, m male, LV left ventricle, MR mitral regurgitation, n no resp. not detectable, n.d. not done, O oral antidiabetic medication, PAP_m mean pulmonary artery pressure, PAWP pulmonary artery wedge pressure, PE pericardial effusion, TAPSE tricuspidal annular plane systolic excursion,TR tricuspidal regurgitation, y yes resp. detectable

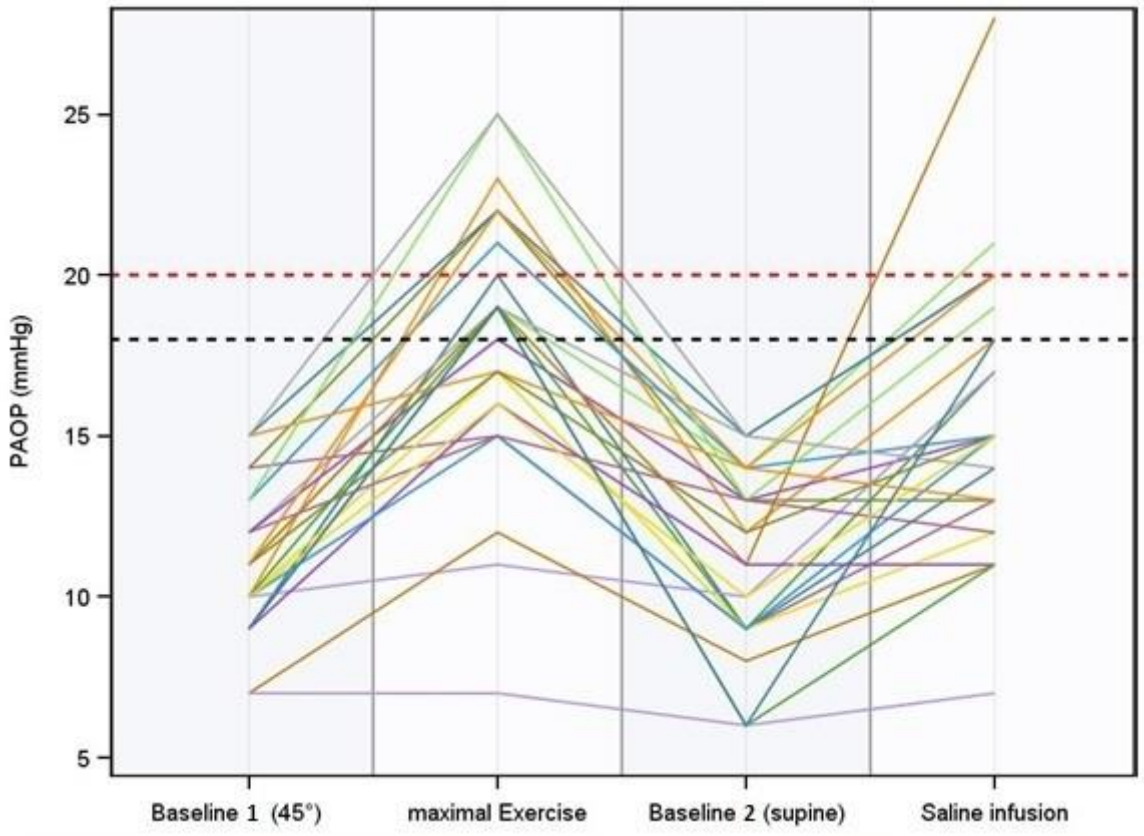

FIGURE E1 Course of PAWP at rest, during exercise, at second baseline and after fluid challenge in the subgroup of patients with pulmonary hypertension (n=26). PAWP: pulmonary artery wedge pressure

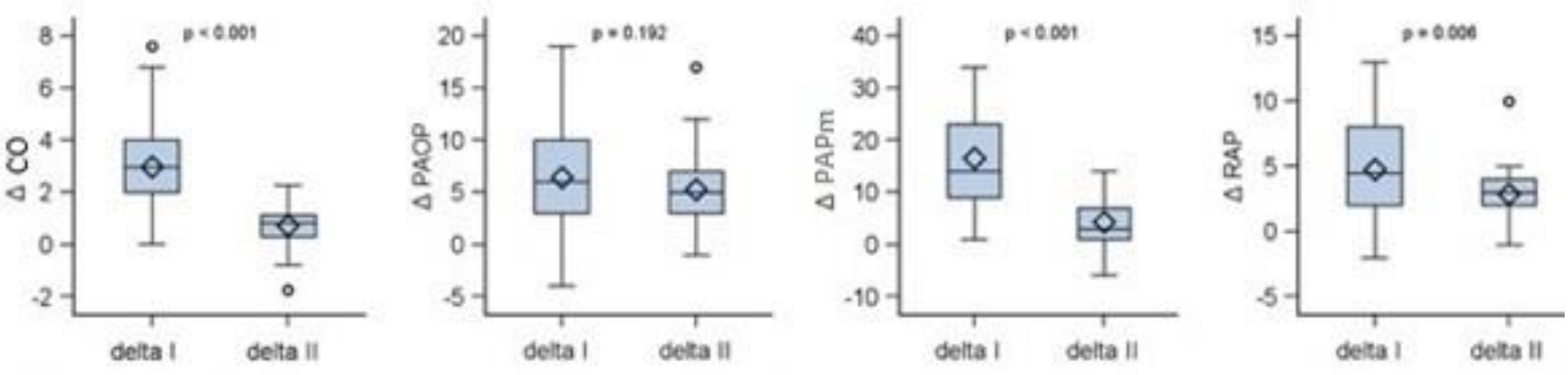

FIGURE E2. Changes of CO, PAWP, PAPm and RAP from baseline during exercise (delta I) and after fluid challenge (delta II) in the subgroup of patients with precapillary pulmonary hypertension (combined PAP_m ≥25 mmHg and PAWP ≤15 mmHg; n=26). Boxes show medians and IQRs (diamonds show means), whiskers show first and third quartiles, respectively, and circles show outliers. CO: cardiac output; IQR: interquartile range; PAOP: pulmonary arterial occlusion pressure; PAP_m: mean pulmonary arterial pressure; RAP: right atrial pressure.