

Refined simplified risk stratification (Risk 2.0) in patients with PAH:

Results from COMPERA

Supplementary material

Table S1 Characteristics of the patients at follow-up (first assessment ≥ 12 weeks after treatment initiation, up to 12 months)

	Low risk n=240 (17.0%)	Intermediate low risk n=395 (27.9%)	Intermediate high risk n=534 (37.8%)	High risk n=245 (17.3%)	All n=1414 (100%)	Available data
Age, years	51.1 (15.7)	63.8 (14.4)	70.1 (12.9)	75.0 (10.1)	66.0 (15.5)	1414 (100.0%)
Female	148 (61.7%)	257 (65.1%)	361 (67.6%)	157 (64.1%)	923 (65.3%)	1414 (100.0%)
BMI, kg/m ²	26.8 (5.2)	29.1 (7.0)	28.6 (6.4)	28.1 (5.7)	28.3 (6.3)	1123 (79.4%)
Diagnosis						1414 (100.0%)
I/H/D PAH	164 (68.3%)	276 (69.9%)	391 (73.2%)	188 (76.7%)	1019 (72.1%)	
CTD-PAH	44 (18.3%)	73 (18.5%)	107 (20.0%)	45 (18.4%)	269 (19.0%)	
CHD-PAH	5 (2.1%)	18 (4.6%)	13 (2.4%)	6 (2.4%)	42 (3.0%)	
HIV-PAH	3 (1.3%)	4 (1.0%)	5 (0.9%)	1 (0.4%)	13 (0.9%)	
PoPH	24 (10.0%)	24 (6.1%)	18 (3.4%)	5 (2.0%)	71 (5.0%)	
WHO FC						1242 (87.8%)
I	23 (10.5%)	10 (2.8%)	1 (0.2%)	0 (0.0%)	34 (2.6%)	
II	196 (89.5%)	172 (48.2%)	49 (9.7%)	0 (0.0%)	417 (32.2%)	
III	0 (0.0%)	175 (49.0%)	445 (88.3%)	169 (77.9%)	789 (60.8%)	
IV	0 (0.0%)	0 (0.0%)	9 (1.8%)	48 (22.1%)	57 (4.4%)	
6MWD, m	490.9 (74.8)	382.3 (88.0)	279.2 (83.9)	145.0 (71.2)	345.4 (128.7)	975 (69.0%)
NT-proBNP, ng/L	139 [68, 223]	372 [207, 711]	1462 [757, 2620]	3137 [1753, 5410]	839 [259, 2168]	1040 (73.6%)
BNP, ng/L	25 [18, 42]	100 [58, 153]	254 [124, 358]	523 [350, 915]	149 [73, 330]	186 (13.2%)
Comorbidities	0.9 (1.0)	1.7 (1.2)	1.9 (1.2)	2.1 (1.1)	1.7 (1.2)	1127 (79.7%)
Arterial hypertension	74 (36.1%)	207 (61.4%)	333 (72.4%)	156 (72.6%)	770 (63.3%)	1217 (86.1%)
Coronary heart disease	18 (9.1%)	73 (22.8%)	128 (28.4%)	68 (31.3%)	287 (24.2%)	1185 (83.8%)
Diabetes mellitus	26 (12.8%)	91 (27.6%)	129 (27.9%)	66 (30.4%)	312 (25.7%)	1212 (85.7%)
BMI ≥ 30 kg/m ²	57 (24.5%)	152 (39.2%)	199 (38.4%)	68 (28.3%)	476 (34.5%)	1379 (97.5%)

Categorical data are shown as n (%) of the respective population. Continuous data are depicted as mean (SD) or median [Q1-Q3]

Abbreviations: BMI, body mass index; PAH, pulmonary arterial hypertension; I/D/H-PAH, idiopathic, drug-associated or hereditary PAH; CTD, connective tissue disease; HIV, human immunodeficiency virus; PoPH, portopulmonary hypertension; CHD, congenital heart disease; WHO FC, World Health Organization Functional Class; 6MWD, 6-minute walking distance; BNP, brain natriuretic peptide; NT-proBNP, N-terminal fragment of pro-brain

natriuretic peptide; RAP, right atrial pressure; PAPm, mean pulmonary arterial pressure; PAWP, pulmonary arterial wedge pressure; CI, cardiac index; PVR, pulmonary vascular resistance; SvO₂, mixed-venous oxygen saturation; DLCO, diffusion capacity of the lung for carbon monoxide; CCB, calcium channel blocker; ERA endothelin receptor antagonists; PDE5i, phosphodiesterase-5 inhibitors; sGCs, stimulator of soluble guanylate cyclase; PCA, prostacyclin analogues

Table S2: PAH medications used at the time of the first follow-up visit

	Low risk n=240 (17.0%)	Intermediate low risk n=395 (27.9%)	Intermediate high risk n=534 (37.8%)	High risk n=245 (17.3%)	All n=1414 (100%)
Therapy (n=1,414)					
CCB	28 (11.7%)	13 (3.3%)	16 (3.0%)	2 (0.8%)	59 (4.2%)
ERA	139 (57.9%)	183 (46.3%)	239 (44.8%)	66 (26.9%)	627 (44.3%)
PDE5i/sGCs	183 (76.2%)	328 (83.0%)	425 (79.6%)	205 (83.7%)	1141 (80.7%)
PCA	10 (4.2%)	20 (5.1%)	26 (4.9%)	14 (5.7%)	70 (5.0%)
Monotherapy	122 (50.8%)	249 (63.0%)	346 (64.8%)	189 (77.1%)	906 (64.1%)
Combination therapy	114 (47.5%)	139 (35.2%)	172 (32.2%)	45 (18.4%)	470 (33.2%)
Combination therapy incl. IV/SC PCA	2 (0.8%)	7 (1.8%)	6 (1.1%)	3 (1.2%)	18 (1.3%)

CCB, calcium channel blocker; ERA endothelin receptor antagonists; PDE5i, phosphodiesterase-5 inhibitors; sGCs, stimulator of soluble guanylate cyclase; IV, intravenous; SC, subcutaneous; PCA, prostacyclin analogues

Table S3: Change in risk strata from baseline to follow-up by risk at baseline with the 3-strata model

Risk	Low at follow-up	Intermediate at follow-up	High at follow-up	Sum
Low at baseline	97	17	0	114
Intermediate at baseline	179	782	134	1095
High at baseline	6	104	95	205
Sum	282	903	229	1414

Table S4: Change in risk strata from baseline to follow-up by risk at baseline with the 4-strata model

Risk	Low at follow-up	Intermediate-low at follow-up	Intermediate-high at follow-up	High at follow-up	Sum
Low at baseline	63	8	2	0	73
Intermediate-low at baseline	102	171	65	8	346
Intermediate-high at baseline	71	198	387	139	795
High at baseline	4	18	80	98	200
Sum	240	395	534	245	1414

Figure S1: Scatterplot of different NT-proBNP cut-off values and the corresponding p-values of the long-rank test for the 369 patients with an NT-proBNP value of 300-1100 ng/l

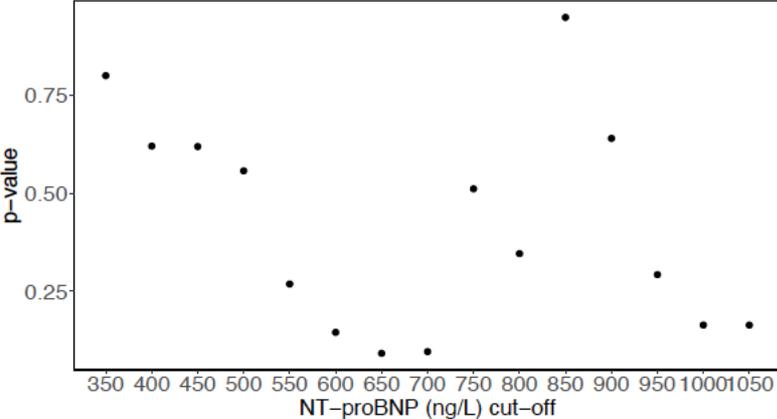
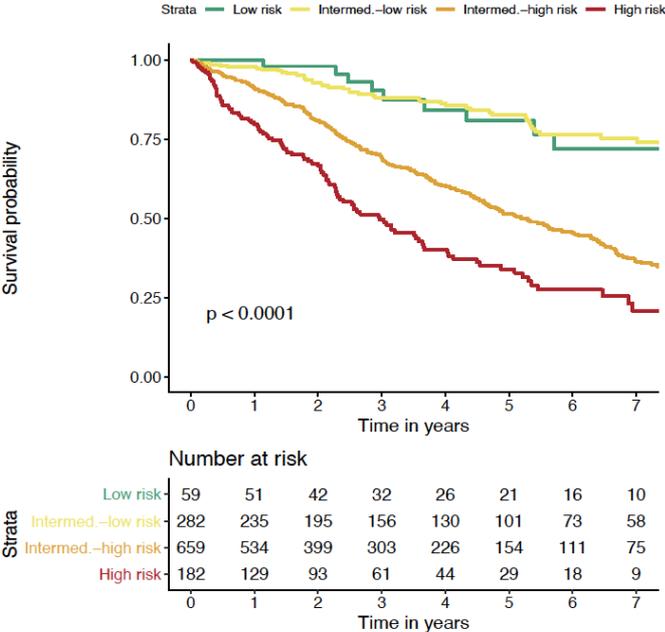


Figure S2 Kaplan-Meier survival curves based on the 4 risk strata obtained at (a) baseline and (b) at first follow-up for the subgroup of patients with idiopathic, heritable and drug-associated PAH

(a)



(b)

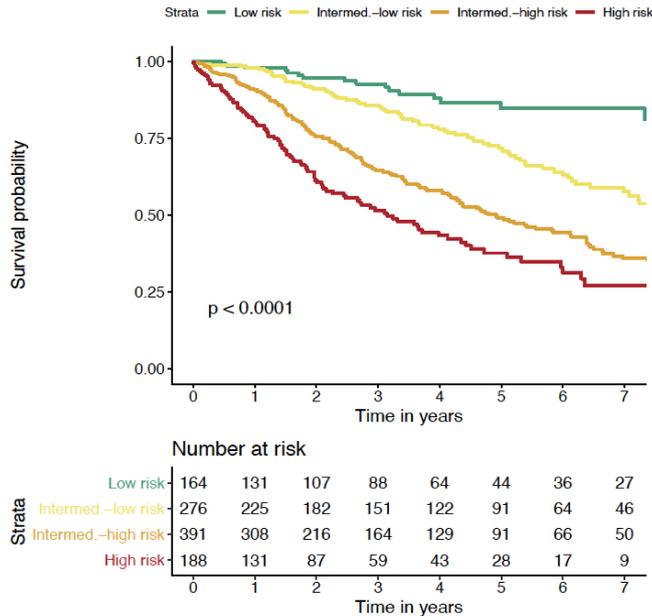
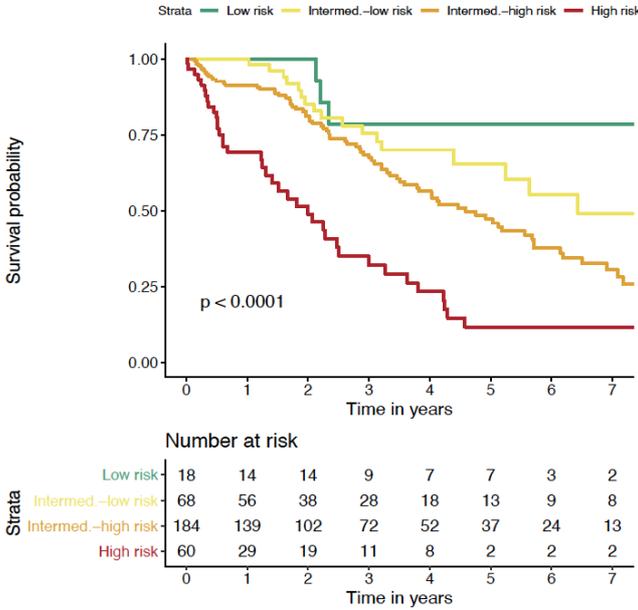


Figure S3 Kaplan-Meier survival curves based on the 4 risk strata obtained at baseline and at first follow-up for the subgroup of patients with connective tissue disease-associated PAH

(a)



(b)

