High prevalence of pulmonary hypertension in HIV-infected patients and reduced outcome in symptomatic patients

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BACKGROUND

The epidemiology and prognostic impact of increased pulmonary pressure among HIV-infected individuals in the antiretroviral therapy era is not well described. We therefore examined the prevalence and outcomes of increased echocardiographic pulmonary pressure in HIV-infected individuals.

METHODS

This study evaluated n = 1798 subjects from the HIV-HEART aging study. The HIV HEART aging study (HIVH) is an ongoing prospective observational cohort study in the German Ruhr Area starting in 2004 to assess the incidence of CVE. This longitudinal analysis included HIV-positive patients with up to 12 years of follow-up. Echocardiography with reported systolic pulmonary arterial pressure (sPAP) and TAPSE as sign of right heart dysfunction was obtained in almost all patients.

RESULTS

PASP was documented in 1064 subjects. The mean follow-up was 8.9 ± 4.1 years. sPAP > 35mmHg as a Sign of pulmonary hypertension (PH) was detected in 157/ 1064 patients (14.8%). Of these, 81 (51%) were asymptomatic and 76 (49%) patients presented with dyspnoe/ tricuspid annular plane systolic excursion (TAPSE) < 20mm as a sign of right heart dysfunction. PASP was lower in patients without PH compared to patients with sPAP > 35mmHg but without symptoms and patients with and sPAP > 35mmHg and signs of right heart dysfunction (23 ± 6.6 mmHg vs. 33.2 ± 10.3 mmHg vs. 37 ± 8.2 mmHg). Overall, 82 (8%) of patients with follow-up data had died. Mortality was associated with an increased sPAP with dyspnoe or decreased TASPE (Fig. 1).

Echocardiographic screening detected signs of PH in a relevant proportion of HIV-positive patients. sPAP > 35mmHg and symptoms of right heart dysfunction were associated with higher mortality.

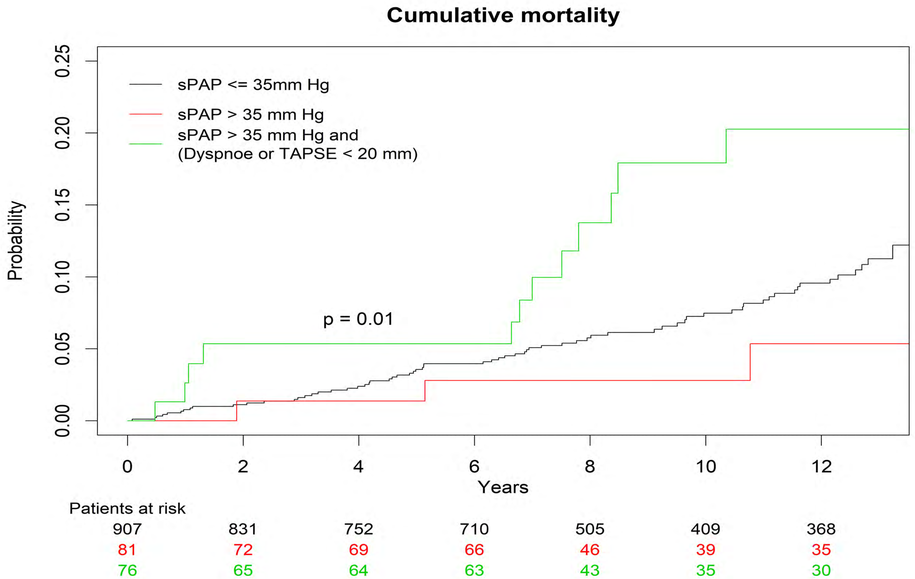


Figure 1

Kaplan-meier curve showing the cumulative mortality of patients with:

- sPAP ≤ 35mmHg,
- sPAP > 35mmHg without signs of right heart failure
- sPAP > 35mmHg and clinical or echocardiographic signs of right heart failure

	sPAP <= 35 n = 907	sPAP > 35 n = 157	p-value adj.
Age (y)	43	47	**<0.001**
BMI (kg/m²)	24	24.2	1.0
Female sex (%)	16	14.6	1.0
Diabetes mellitus (%)	3.9	3.8	0.98
Arterial hypertension (%)	15.0	16.4	1.0
CAD (%)	3.1	4.5	1.0
COPD (%)	4.2	12.2	**<0.001**
Age at HIV diag. (y)	35	40	**<0.001**
HIV duration (y)	7.5	7.4	1.0
Hepatitis C (%)	8.3	6.4	1.0
Viral load (1/ml, median)	335	347	1.0
CD4 cells (µl, median)	480	462	1.0
CD4 / CD8 ratio (%)	0.66	0.63	1.0
ART (%)	85.4	91.1	0.064

Table 1. Patient characteristics

Definitions: BMI = Body mass index; CAD = Coronary artery disease; COPD = chronic obstructive lung disease; ART = anti-retroviral therapy. Data are mean, median or percentage.

CONCLUSIONS

Echocardiographic screening detected PH in a relevant proportion of HIV-positive patients. PH and symptoms of right heart dysfunction were associated with higher mortality.

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