Letters to the Editors

Survival of connective tissue disease associated pulmonary arterial hypertension

Sirs,
Pulmonary arterial hypertension (PAH) is a severe complication of some connective tissue diseases (CTD) (1). In our registry, CTD-PAH accounted for 25.8% of all PAH cases (2).

The objective of this study was to describe the clinical and haemodynamic characteristics, as well as survival, of different forms of CTD-PAH in a single Brazilian cohort.

All newly CTD-PAH diagnosed patients followed at the outpatient clinics of Rheumatology and Pulmonary Divisions of the University of Sao Paulo, Brazil, were enrolled from 2008 to 2013. The PAH diagnosis was confirmed by right heart catheterisation (3). Baseline clinical, functional, and haemodynamic data were analysed. Survival was estimated using the Kaplan-Meier method with log-rank test used for curve comparison

Thirty-one patients with CTD-PAH were included: 15 with systemic sclerosis (SSc), the remaining 16 patients were classified as non-SSc (11 with systemic lupus erythematosus (SLE) and 5 with mixed connective tissue disease).

In the SSc group, 93.3% were women and 12 had limited SSc form. Six patients presented positive anticentromere antibodies and one had positive anti-Scl70.

SSc patients were significantly older (mean age 59.9 ± 14.4 vs. 38.9 ± 10.5 yrs in non-SSc, $p<0.001$). The groups were similar regarding haemodynamic and functional parameters, including mean pulmonary arterial pressure (38.2 ± 11.2 vs. 41.4 ± 11.5 mmHg, $p=0.45$), pulmonary artery wedge pressure (10 ± 4 vs. 9 ± 2 mmHg, $p=0.47$), pulmonary vascular resistance (6.2 ± 2.0 vs. 8.5 ± 5.2 Wood UI, $p=0.12$), cardiac output (4.54 ± 1.00 vs. 4.30 ± 1.23, $p=0.59$), BNP (174 ± 221 vs. 143 ± 193 pg/mL, $p=0.69$) and six-minute walk test (325 ± 122 vs. 401 ± 83 m, $p=0.15$), for SSc and non-SSc, respectively.

Overall survival rates at 1, 3 and 5 years were 86.7%, 58.7%, 40.2%, respectively, for SSc, and 100%, 87.5%, and 76.6%, for non-SSc ($p=0.028$). Considering the age at the time of PAH diagnosis, older age was independently associated with better prognosis ($p=0.008$; HR for age=0.92 (95%CI 0.86-0.98)), regardless of the baseline diagnosis. This association was also evident through the survival curves according to the median age at PAH diagnosis in each group (Fig. 1). In SSc, PAH was diagnosed at 71 ± 11 years in survivors against
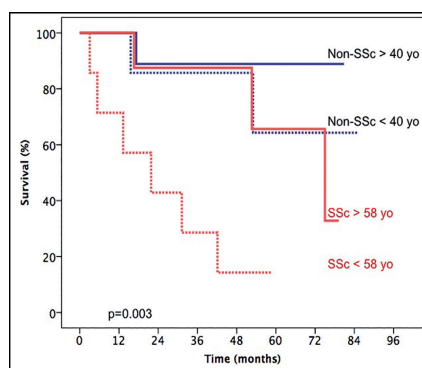

Fig. 1.

52 ± 11 years old in non-survivors ($p=0.008$), with similar results considering the age at the CTD diagnosis, suggesting that the time between CTD and PAH diagnosis had no association with survival.

In our cohort, differently from most studies, only newly diagnosed patients were included. SSc accounted for approximately half of all newly diagnosed CTD-PAH patients with a significantly worse survival despite similar functional and haemodynamic profile. Interestingly, younger age at PAH diagnosis was significantly associated with poorer survival, regardless of the baseline CTD.

Our study is the first to discern the subtypes CTD-PAH in Latin America. Our similar proportion of CTDs (SSc/non-SSc) differs from British (4) and American (5) cohorts, in which SSc represented the majority of cases, and also from eastern studies (6, 7), with SLE as the most prevalent form.

In the SSc group, 3-year mortality rate of about 48% after PAH diagnosis was similar to the literature (5, 8, 9). We have not identified any haemodynamic parameter predictive of prognosis, possibly due to the limited number of patients enrolled. In non-SSc group, 3-year survival was similar to IPAH, as previously published by our group (2), and also in a recent meta-analysis (10). Despite better survival in non-SSc, functional and haemodynamic profiles were similar to SSc patients. In our centre, an active screening based on annual echocardiography is performed in SSc, while non-SSc patients are tested only in the presence of symptoms, the similar haemodynamics reinforces that probably echocardiography alone is insufficient for an early diagnosis in SSc.

In conclusion, we identified that younger patients with CTD-PAH are at a particularly higher risk of death, especially in SSc patients who have higher mortality rates compared with other forms of CTD-PAH, as SLE and MCTD.

A.P. Luppino Assad[1]
F. Gavilanes Oleas[2]
J.L. Alves, Jr[2]
C.J.C. dos Santos Fernandes[2]
P.D. Sampaio-Barros[1]
R. Souza[2]

[1]Rheumatology Division, Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo; [2]Pulmonary Division, Heart Institute, University of Sao Paulo Medical School, Brazil.

Please address correspondence to:
Rogerio Souza, MD, PhD,
Pulmonary Department, Heart Institute,
University of Sao Paulo Medical School,
Av. Dr. Eneas de Carvalho Aguiar, 44,
Sao Paulo 05403-900, Brazil.
E-mail: souza.rogerio@me.com

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