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. A total of 102 patients with a diagnosis of CTD-PAH, 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 analyzed. 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 anticientromere antibodies and one had positive anti-Scl70. SSc patients were significantly older (mean age 59 ± 14.4 vs. 39 ± 10.5 years 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 (8.2 ± 5 vs. 8 ± 5.2 Wood Units, p = 0.12), cardiac output (4.5 ± 1.0 vs. 4.3 ± 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 52 ± 11 years old in non-survivors (p = 0.008), with similar results considering the time at the CTD diagnosis, suggesting that the time between CTD and PAH diagnosis had no association with survival.

In our cohort, contrary to 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 our cohort, PAH diagnosis 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.

Fig. 1.

References