Comparison of Clinical Presentation and Incidence of Cardiopulmonary Involvement between Male and Female Patients with Early Systemic Sclerosis

Surachet Tungteerabunditkul¹ Suraporn Wangkaew² Narawut Prasertwittayakij³ Juntima Euathrongchit⁴

¹Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, 50200, Thailand, ²Division of Rheumatology, Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, 50200, Thailand, ³Division of Cardiology, Department of Internal Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, 50200, Thailand, ⁴Division of Diagnostic Radiology, Department of Radiology, Faculty of Medicine, Chiang Mai University, Chiang Mai, 50200, Thailand

Background: Data regarding the incidence rate (IR) of cardiopulmonary involvement in comparison between male and female are limited

Objectives: This study aimed to compare the prevalence of clinical manifestations and the incidence rate (IR) of cardiopulmonary involvement between male and female patients with early systemic sclerosis (SSc).

Methods: This inception cohort of SSc patients seen at the Rheumatology clinic, Maharaj Nakorn Chiang Mai Hospital was evaluated between January 2010 and June 2016. All patients were assessed for clinical manifestations and underwent ECG, echocardiography, and HRCT at study entry and every 12 months thereafter. Patients with their continuing follow up at least 12 months were included for analysis.

Results: One hundred and fifteen patients (89 dcSSc) with mean (SD) disease duration of 11.6 months (8.8) at cohort entry were enrolled during mean (SD) observation period of 3.8 years (1.6). Of these, there were 46 male patients (40%). At enrollment, the male group had higher prevalence of hypo-hyperpigmentation (84.8% vs 65.2%, p = 0.021), myositis (26.1% vs 10.1%, p = 0.024) and right ventricular dysfunction (8.7% vs 0%, p = 0.024) compared with the female group. At last visit, the male group also had higher cumulative prevalence of digital pitting scar (91.3% vs 72.5%, p = 0.013), digital ulcer (47.8% vs 27.5%, p = 0.026), telangiectasia (93.5% vs 69.6%, p = 0.002), joint contracture (69.6% vs 43.5%, p = 0.006), tendon friction rub (39.1% vs 20.3%, p = 0.027), LVEF < 50% (21.7% vs 8.7%, p = 0.048) and right ventricular dysfunction (34.8% vs 7.2%, p < 0.001) compared with the female group. Additionally, significant higher IR of right ventricular dysfunction (8.21 vs 1.99 per 100 person-years, p=0.006) was noted in the male group compared to the female group. However, no significant IR of LVEF <50% (5.63 vs 2.10 per 100 person-years, p=0.781), interstitial lung disease (63.66 vs 39.19 per 100 person-years, p=0.192), and pulmonary hypertension (2.81 vs 1.55 per 100 person-years, p=0.339) were observed between the two groups.

Conclusions: Male patients demonstrate more severe clinical manifestations when compared with female patients, with early systemic sclerosis. Moreover, male patients have significant higher IR of right ventricular dysfunction than female patients.

Keywords: Clinical presentation, Incidence rate, Cardiopulmonary involvement, Male, Female, Early systemic sclerosis, Gender