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**Title:** Lung function abnormalities in patients with heart failure and preserved ejection fraction

Alejandra 16683 Lopez-Giraldo lopez01@clinic.ub.es MD <sup>1</sup>, Rut 16684 Andrea randrea@clinic.ub.es MD <sup>2</sup>, Patricia 16685 Sobradillo psobradillo@ciberes.org MD <sup>1</sup>, Carlos 16686 Falces cfalces@clinic.ub.es MD <sup>2</sup>, Laura 16687 Sanchis lsanchis@clinic.ub.es MD <sup>2</sup>, Concepcion 21215 Gistau cgistau@clinic.ub.es <sup>1</sup>, Magda 16688 Heras mheras@clinic.ub.es MD <sup>2</sup>, Josep 16692 Brugada jbrugada@clinic.ub.es MD <sup>2</sup> and Alvar 16693 Agusti aagusti@clinic.ub.es MD <sup>1</sup>. <sup>1</sup> Pneumology, Thorax Institute, Hospital Clinic, Barcelona, Spain and <sup>2</sup> Cardiology, Thorax Institute, Hospital Clinic, Barcelona, Spain .

**Body:** INTRODUCTION Heart failure with preserved ejection fraction (HFPEF) accounts for 40-50% heart failure patients. The aim of this study was to evaluate the prevalence, type and severity of lung function abnormalities among outpatients with HFPEF. METHODS In this prospective, descriptive study we included consecutive outpatients with new onset of HFPEF according with the European Society of Cardiology criteria. All underwent a clinical evaluation, chest X-ray, electrocardiogram, echocardiography, brain natriuretic peptide determination, forced spirometry, lung volumes by body plethysmography, single-breath carbon monoxide diffusing capacity (DLCO) corrected for alveolar volume and arterial blood gases. RESULTS We included 63 outpatients (68% females), mean age 77 years. Mean body mass index 29.8 kg/m<sup>2</sup>. 85% had arterial hypertension. 25.4% former smokers and 4.8% active smokers. 71.4% did not report any known respiratory diagnosis. Complete lung function evaluation was available in 50 patients, 88% showed abnormal results: 30% had evidence of airflow limitation (mild 7%, moderate 53%, severe 40%), 16% restrictive ventilatory defect (mild 75%, moderate 25%), mixed pattern 14%. DLCO was abnormal in 82%(mild 63.4%, moderate 29.2%, severe 7.3%). Correction by alveolar volume was complete in 39%, partial 46% and 14,6% did not correct. Arterial blood gases were measured in 45 patients, 67% had hypoxemia (mild 63.3%, moderate 26.6%, severe 10%). CONCLUSIONS Patients with HFPEF show a high prevalence of lung function abnormalities. Most are underdiagnosed and may contribute to their symptoms. Their pathophysiology is likely multifactorial (smoking, obesity, age, heart function) but requires further research.