

#### **ORAL PRESENTATION**

"Short-term evolution of nutritional status in patients with idiopathic pulmonary fibrosis"

Dr. Giovanni Franco Resident in the Respiratory Diseases - University of Milano-Bicocca

## "Short-term evolution of nutritional status in patients with idiopathic pulmonary fibrosis"

#### Authors

Giovanni Franco, Paola Faverio, Alessia Fumagalli, Sara Conti, Fabiana Madotto, Francesco Bini, Sergio Harari, Michele Mondoni, Tiberio Oggionni, Emanuela Barisione, Paolo Ceruti,
Maria Chiara Papetti, Bruno Dino Bodini, Antonella Caminati, Angela Valentino, Stefano Centanni, Paola Lanzi, Matteo Della Zoppa, Silvia Crotti, Marco Grosso, Samir Giuseppe Sukkar, Denise Modina, Marco Andreoli, Roberta Nicali, Giulia Suigo, Sara Busnelli, Giuseppe Paciocco, Sara Lettieri, Lorenzo Giovanni Mantovani, Giancarlo Cesana, Alberto Pesci, Fabrizio Luppi



Faverio P, Bocchino M, Caminati A, Fumagalli A, Gasbarra M, Iovino P, Petruzzi A, Scalfi L, Sebastiani A, Stanziola AA, Sanduzzi A. Nutrition in Patients with Idiopathic Pulmonary Fibrosis: Critical Issues Analysis and Future Research Directions. Nutrients. 2020 Apr 17;12(4):1131.

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Compare respiratory function, physical performance and nutritional parameters at the time of disease diagnosis and after 6 months of follow-up in a cohort of patients with IPF followed-up prospectively in 9 IPF referral centers in northern Italy.

# **METHODS**

#### **INCLUSION CRITERIA**

- ✓ ≥40-years of age;
- ✓ diagnosis of IPF according to the American Thoracic Society (ATS) / European Respiratory Society (ERS) / Japan Respiratory Society / Latin American Thoracic Society 2018 guidelines;
- ✓ gave written informed consent.

### **EXCLUSION CRITERIA**

- X Severe renal failure, defined as a glomerular filtration rate <30 mL·min<sup>-1</sup>;
- X New York Heart Association class IV;
- X Severe liver failure, defined as Child-Pugh score class C;
- X Solid or haematological tumours;
- X Received therapy with Pirfenidone or Nintedanib at baseline;
- X Unable to walk;
- X Needed oxygen therapy at rest;
- X Recruited in other interventional experimental protocols studying new drugs.

## **METHODS**

### **RESPIRATORY ASSESTMENT**



- Pulmonary function tests;
- Diffusing capacity for carbon monoxide;
- 6-minute walking test

### **NUTRITIONAL EVALUATION**



- Anthropometric measurements;
- Nutritional questionnaires;
- Dynamometry and 4-meter gait speed test;
- Bioelectrical Impedance Analysis

### **RESULTS**

131 consecutive patients with IPF screened for participation in the study

41 excluded:20 refused to participate17 met exclusion criteria4 received an ILD diagnosis other than IPF

90 patients enrolled in the study at T1:

42 from San Gerardo Hospital, Monza 13 from Salvini Hospital, Garbagnate Milanese 11 from San Giuseppe Hospital, Milan 8 from San Paolo Hospital, Milan 5 from San Matteo Hospital, Pavia 4 from Spedali Civili, Brescia 4 from San Martino Hospital, Genoa

2 from Ospedale Maggiore Della Carità, Novara

1 from Ospedale di Circolo, Busto Arsizio

8 lost to follow-up 82 patients partecipating in T2



TABLE 2 Demographics and clinical characteristics at baseline (T1)	
	Population at T1
Patients, n	90
Demographic characteristics	
Female, n (%)	19 (21.1)
Age at enrolment	
Mean±sp	72.7±6.8
Median (interquartile range)	73 (68–78)
Smoking history, n (%)	
Non-smoker	25 (27.8)
Active smoker	1 (1.1)
Ex-smoker	63 (70.00)
IPF GAP stage, n(%)	
1	26 (28.9)
2	47 (52.2)
3	16 (17.8)

Physical activity	
IPAQ score	
Mean±sp	2089±2977
Median (interquartile range)	900 (262.5–2506)
IPAQ category, n (%)	
<700, inactive	39 (43.3)
700–2519, sufficiently active	28 (31.1)
>2519, very active	22 (24.4)
Comorbidities, n (%)	
Diabetes	10 (11.1)
Concomitant emphysema	6 (0.7)
Systemic hypertension	38 (42.2)
At least one cardiovascular comorbidity other than systemic hypertension <sup>#</sup>	26 (28.9)
Chronic liver disease	7 (7.9)
IBD	0 (0.0)
Dysthyroidism	5 (5.5)
Hyperthyroidism	2 (2.2)
Hypothyroidism	3 (3.3)
GORD	23 (25.6)
Osteoporosis	7 (7.8)
Previous solid neoplasm	14 (15.6)
Anxiety and depression	6 (6.7)

	Baseline (N= 82 patients)	6-month follow-up (N= 82 patients)	p-value
R	espiratory function param	ieters	
FVC (L), Mean (SD)	2.87 (0.81)	2.89 (0.88)	0.066
FVC%, Mean (SD)	86.3 (21.2)	89.4 (24.0)	0.059
DLCO%, Mean (SD)	53.6 (18.3)	51.8 (16.4)	0.127
Physical activity and performance parameters			
GAIT speed 4m (m/s), Mean (SD)	1.13 (0.32)	1.11 (0.32)	0.244
Reduced GAIT speed 4m, n (%)	57 (81.4%)	43 (61.4%)	0.375
Reduced hand-grip strength, n (%)	29 (41.4%)	29 (41.4%)	0.388
6MWT, metres walked, Mean (SD)	410.4 (104.1)	395.3 (108.1)	0.117
IPAQ, Mean (SD)	2,106 (3,069)	2,140 (3,165)	0.821
IPAQ categories			0.66
≤ 700, inactive	37 (45.1%)	23 (28.1%)	
700 – 2519, sufficiently active	24 (29.3%)	19 (23.2%)	
> 2519, very active	20 (24.4%)	13 (15.9%)	

	Baseline (N= 70 patients)	6-month follow-up (N= 70 patients)	p-value
	Anthropometric measurem	ients	$\frown$
BMI, Mean (SD)	27.7 (4.0)	26.6 (4.0)	<.001
Weight loss> 5% in 6 months, n (%)	8 (11.4%)	21 (30.0%)	0.004
Arm circumf. (cm), Mean (SD)	30.4 (3.5)	29.5 (3.1)	0.001
Calf circumf. (cm), Mean (SD)	36.6 (3.3)	36.2 (3.3)	0.089
Abdominal circumf. (cm), Mean (SD)	99.8 (10.2)	97.9 (10.0)	<.001
Increased abdominal circumf., n (%)	33 (47.1%)	24 (34.3%)	0.125
Arm muscle circumf. (cm), Mean (SD)	27.2 (3.5)	26.5 (3.2)	0.105

	Nutritional status scores		
MNA, Mean (SD)	25.9 (3.5)	24.9 (3.4)	0.019
MNA categories			0.06
Score <17, n (%)	2 (2.86%)	1 (1.43%)	
Score 17 - 23.5, n (%)	11 (15.71%)	20 (28.57%)	
Score >23.5, n (%)	57 (81.43%)	43 (61.43%)	

	Baseline (N= 70 patients)	6-month follow-up (N= 70 patients)	p-value
	Bioelectrical impedance and	alysis	
Resistance, Mean (SD)	385.8 (123.2)	349.7 (136.3)	0.041
Reactance, Mean (SD)	34.5 (15.3)	31.1 (19.2)	0.016
Phase angle, Mean (SD)	4.94° (1.12°)	4.55° (1.13°)	0.006
FFMI (Kg/m <sup>2</sup> ), Mean (SD)	23.0 (5.1)	22.1 (5.3)	0.32
Reduced FFMI, n (%)	3 (2.9%)	11 (15.7%)	0.045
SMI (Kg/m <sup>2</sup> ), Mean (SD)	13.9 (4.0)	14.0 (4.8)	0.705
Reduced SMI, n (%)	2 (2.9%)	5 (7.1%)	0.375
BFMI (Kg/m <sup>2</sup> ), Mean (SD)	6.3 (5.0)	3.7 (4.1)	0.001
Reduced BFMI, n (%)	19 (27.1%)	25 (35.7%)	0.064



### **DISCUSSION**

- Significant progression of alterations in body composition can be observed <u>early</u> in the disease course;
- Alteration in body composition are <u>not</u> accompanied by pulmonary fuction test and by phisical performance worsening;
- Antifibrotic drugs may cause GI adverse effects;
- Increase in the proportion of sarcopenic patients



#### **THANK FOR YOUR ATTENTION!**