

Prevalence and Impact of Fibromyalgia in Patients with Idiopathic Inflammatory Myopathies

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Background

- Fibromyalgia (FM) is the prototypical central pain disorder that can be associated with rheumatic conditions; prevalence of FM in patients with idiopathic inflammatory myopathies (IIM) is unknown
- Aims:** (i) to examine the prevalence of and factors associated with FM and fibromyalgians in patients with IIM, and (ii) to assess the association between FM and myositis disease activity

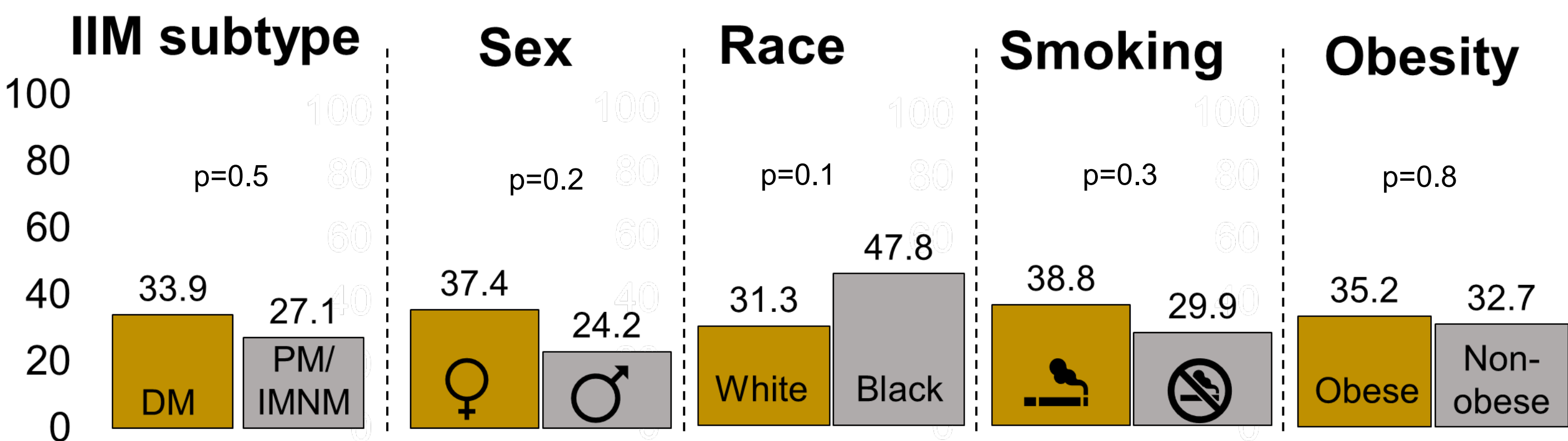
Methods

- FORWARD is a longitudinal prospective registry of adults with rheumatic diseases in the US who are recruited from rheumatology clinics
- Comparison of patients with IIM who fulfilled the FM criteria vs those who did not with t-test and chi square
- Logistic regression models used to identify factors associated with FM

Results

- ~34% of IIM patients fulfilled the FM criteria

✱ FM prevalence and fibromyalgians (polysymptomatic distress score [PSD]) were comparable across subgroups



✱ Patients with IIM who have FM were more likely to be younger, have lower education level and annual income

Sociodemographics	Without FM (n=110)	With FM (n=57)	P-value
Age	56.5 ± 13.6	49.8 ± 13.4	0.001*
Symptom duration (yrs)	8.7 ± 8.1	7.9 ± 6.4	0.9
Female (%)	82 (76.6%)	49 (86.0%)	0.2
White, non-Hispanic (%)	88 (88.0%)	40 (78.4%)	0.2
Ever smoker (%)	49 (44.5%)	31 (54.4%)	0.3
Body mass index (kg/m ²)	28.2 ± 6.2	28.8 ± 7.5	0.6
Education level (years)	14.5 ± 1.9	13.1 ± 2.4	<0.0001*
Total annual income (\$)	60,100 ± 29,400	42,300 ± 31,100	<0.0001*

✱ Patients with IIM who have FM had worse fatigue, disease activity, disability, quality of life, lower health satisfaction, and greater number of ED visits

Outcomes	Without FM	With FM	P-value
Fatigue VAS (0-10)	3.4 ± 2.8	7.3 ± 2.4	<0.0001*
Patient Global Dis Activity (0-10)	3.1 ± 2.4	5.7 ± 2.7	<0.0001*
HAQ (0-3)	0.8 ± 0.6	1.6 ± 0.6	<0.0001*
Patient Activity Scale (0-10)	2.8 ± 1.8	5.6 ± 1.9	<0.0001*
SF-36 Physical component (0-100)	39.6 ± 10.8	29.4 ± 8.7	<0.0001*
SF-36 Mental component (0-100)	50.8 ± 10.1	39.5 ± 12.7	<0.0001*
Polysymptomatic distress (0-31)	7.8 ± 5.2	21.0 ± 5.0	<0.0001*
Health satisfaction (0-4)	2.4 ± 1.2	1.3 ± 1.3	<0.0001*
General practitioner visit (#)	1.7 ± 1.3	2.2 ± 1.5	0.07
Emergency department visit (#)	0.4 ± 0.7	1.0 ± 1.2	0.01*

✱ Patients with IIM who have FM had higher comorbidity index and were more likely to have depression, anxiety, diabetes mellitus and pulmonary disorder

Comorbidities	Without FM	With FM	P-value
Comorbidity index (0-9)	1.8 ± 1.5	2.9 ± 1.9	<0.0001*
Osteoarthritis	21 (19.1%)	7 (12.3%)	0.4
Depression	21 (19.8%)	26 (47.3%)	<0.0001*
Anxiety	13 (12.3%)	22 (40.0%)	<0.0001*
Hypertension	56 (50.9%)	29 (50.9%)	1
Myocardial infarction	3 (2.7%)	6 (10.5%)	0.08
Diabetes mellitus	8 (7.3%)	12 (21.1%)	0.02*
Cancer	17 (15.5%)	11 (19.3%)	0.7
Renal disorder	11 (10.0%)	6 (10.5%)	1
Pulmonary disorder	23 (20.9%)	24 (42.1%)	0.007*
Gastrointestinal disorder	49 (44.5%)	33 (57.9%)	0.1
Cardiac condition	18 (16.4%)	17 (29.8%)	0.07

✱ Patient global disease activity was significantly associated with FM after controlling for significant variables* in univariate models

	Univariate logistic regression model			Multivariable logistic regression model		
	Odds ratio	SE	p value	Odds ratio	SE	p value
Pt Global Dis Activity	1.48	0.07	<0.0001*	1.25	0.09	0.02*
Sociodemographic variables						
Age	0.96	0.01	0.004*	0.98	0.02	0.2
Symptom dur (yrs)	0.98	0.02	0.5			
Sex (male)	0.54	0.44	0.2			
Race (White)	0.50	0.46	0.1			
Smoking (yes)	1.48	0.33	0.2			
Body mass index	1.01	0.03	0.6			
Education level (yrs)	0.73	0.09	0.001*	0.88	0.13	0.3
Total income (\$)	0.98	0.01	0.001*	0.99	0.01	0.1
Non-DM (vs DM)	0.86	0.39	0.7			
Comorbidities						
Comorbidity index [†]	1.48	0.10	0.002*	1.23	0.15	0.2
Osteoarthritis	0.59	0.47	0.3			
Depression	3.63	0.36	0.0004*	1.71	0.62	0.4
Anxiety	4.77	0.40	0.0001*	1.41	0.67	0.6
Hypertension	1.00	0.33	0.9			
Myocardial infarction	4.2	0.72	0.004*	1.84	1.44	0.7
Diabetes mellitus	3.4	0.49	0.013*	1.90	0.73	0.4
Cancer	1.31	0.43	0.5			
Renal disorder	1.06	0.54	0.9			
Pulmonary disorder	2.75	0.36	0.005*	2.72	0.56	0.07
GI disorder	1.71	0.33	0.1			
Cardiac condition	2.17	0.39	0.04*	0.66	0.74	0.6
Medications						
NSAIDs	0.66	0.38	0.3			
Opioids	3.92	0.38	0.0003*	2.81	0.57	0.07
Glucocorticoids	1.07	0.34	0.8			
Anti-rheumatic drugs	0.67	0.34	0.2			

*All available variables were tested in univariate regression models and only those that were found to be significant were included in the multivariable models
[†] Comorbidity index and rest of the comorbidities were assessed in separate multivariable models

Conclusion

- One third of patients with IIM had comorbid FM and comorbid FM was associated with worse patient reported disease activity and clinical outcomes, poorer sociodemographic factors and higher health care utilization