Treatment Trajectories and Patient Outcomes in Idiopathic Inflammatory Myopathies

Kristin Wipfler[1], Gulsen Ozen[2], Michael G. Feely[2], Urbano Sbarigia[3], Federico Zazzetti[3], Anna Sheahan[3], Iris Lin[3], Evo Alemao[3], & Kaleb Michaud[1,2]

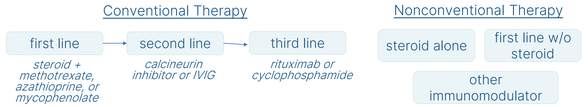
1. FORWARD, The National Databank for Rheumatic Diseases, Wichita, KS
2. University of Nebraska Medical Center, Omaha, NE
3. Janssen Pharmaceuticals, Titusville, NJ

BACKGROUND

- Idiopathic inflammatory myopathies (IIM) are rare, heterogeneous diseases characterized by skeletal muscle inflammation & weakness
- Conventional therapy is based on expert opinion
- Adherence to recommended therapies and the impact of nonconventional therapies in real-world circumstances is unclear
- Objective: to characterize treatment trajectories in IIM and assess changes in PROs, symptom frequency, and comorbidity burden among those on conventional vs nonconventional therapies

METHODS

- Data were provided by adults with IIM enrolled in FORWARD
- Participants with co-occurring RA, SLE, or SSc were excluded
- Included participants were classified by the subgroups DM, PM (which may include IMNM), and unspecified DM/PM
- Participant characteristics were assessed at baseline (study entry)
- Changes in treatment groups and in PROs, symptoms, and comorbidities were assessed from baseline to most recent observation



RESULTS

- Over 504 person-years, 47% of participants reported first line treatment, 10% reported second line, and 3% reported third line as the most advanced conventional therapy received; the remaining 40% reported nonconventional or no treatment throughout observation
- Analyses of PROs and symptom frequencies from baseline to last observation showed significant improvements in SF-36 PCS (37.5 to 40.0, p=0.02), PSD (10.2 to 8.3, p=0.03), and muscle weakness (71% to 48%, p<0.01) among those consistently on conventional therapies
- Similar analyses showed increased frequencies of numerous comorbidities in the same cohort over time

CONCLUSION

- A substantial proportion of individuals with IIM do not receive combination therapy as their first line treatment
- Individuals with IIM who are consistently on conventional treatments had decreased symptom burden, improved physical function, and increased comorbidity burden over time, while those on nonconventional treatments did not have any significant changes in PROs, symptoms, or comorbidities
- The use of nonconventional treatments highlights the need for further investigation of their effectiveness

DISCLOSURES

- This study was funded by Janssen Pharmaceuticals

Despite recommendations to pair glucocorticoids with another immunosuppressive drug for initial IIM treatment, many individuals do not receive combination therapy. Those consistently on conventional therapies have improved physical function and reduced symptom burden, but increased comorbidity burden.

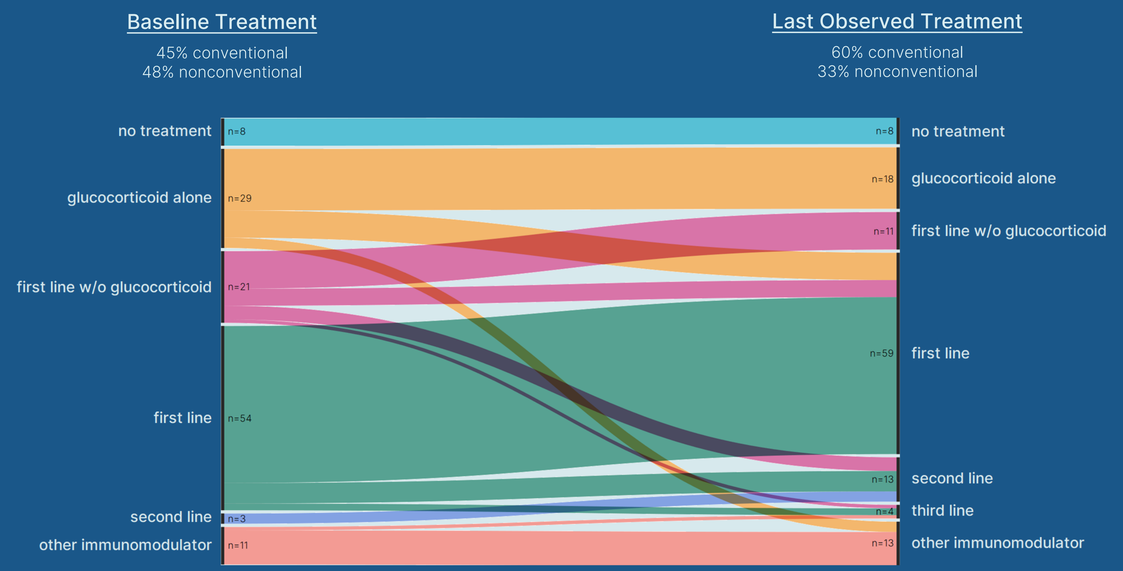


Figure 1. Treatment progression among individuals in FORWARD with IIM. Baseline (at study entry) treatment category is shown on the left, and last observed treatment is shown on the right. First line = glucocorticoid in cominbation with methotrexate, azathioprine, or mycophenolate. Second line = calcineurin inhibitors or IVIG. Third line = rituximab or cyclophosphamide. Other immunomodulator = immunomodulator other than those associated with conventional therapy.

Abstract ID 1563405

Table 1. Characteristics of participants at study entry by baseline treatment category.

	Conventional Therapy n=57	Nonconventional Therapy n=61	No Therapy n=8	p
Age, years	54.6 (14.3)	57.2 (14.2)	57.0 (8.3)	0.61
Female sex, %	77.8	82.8	37.5	0.02
White race, %	90.6	88.5	75	0.62
IIM subtype				
DM	41.1	44.1	37.5	
PM/IMNM	42.9	32.2	12.5	0.19
Unspecified	16.1	23.7	50	
Time since symptom onset, years	6.5 (6.0)	8.3 (6.3)	4.1 (5.2)	0.2
Study entry prior to 2010, %	55.4	66.1	37.5	0.5
Time from baseline to last observed treatment, years	3.6 (3.4)	4.4 (4.8)	2.0 (2.4)	0.01
Rural residence, %	30.4	21.1	37.5	0.41
Hx smoking, %	42.9	40.7	75	0.18
Pain VAS, 0-10	3.1 (2.8)	3.2 (2.9)	5.1 (3.5)	0.71
Global severity, 0-10	3.6 (2.8)	3.4 (2.7)	6.3 (2.8)	0.03
HAQ-II, 0-3	1.0 (0.7)	0.9 (0.6)	1.2 (0.7)	0.48
PAS-II, 0-3	3.5 (2.3)	3.3 (2.3)	5.1 (2.6)	0.86

DM=dermatomyositis; PM=polymyositis; IMNM=immune-mediated necrotizing myopathy; VAS=visual analog scale; HAQ=Health Assessment Questionnaire; PAS=Patient Activity Scale.

Table 2. Changes in patient-reported outcomes, symptoms, and comorbidities from baseline to last observed treatment by treatment trajectory group. Statistically significant differences (paired t-tests and McNemar tests, p<0.05) are shown in bold.

	Stayed on Nonconventional Treatment n=42		Stayed on Conventional Treatment n=57		Switched (Nonconventional to Conventional) n=19	
	Baseline	Last	Baseline	Last	Baseline	Last
PROs, mean (SD)						
Pain VAS, 0-10	3.4 (3.1)	3.3 (3.0)	3.1 (2.7)	2.9 (3.0)	3.4 (2.8)	2.7 (1.8)
Fatigue VAS, 0-10	4.4 (3.6)	4.1 (3.2)	4.3 (2.9)	3.7 (3.2)	4.6 (2.9)	4.2 (2.9)
Global VAS, 0-10	3.5 (2.9)	3.7 (2.9)	3.6 (2.8)	3.3 (2.7)	3.8 (2.6)	4.0 (2.1)
HAQ-II, 0-3	0.9 (0.7)	0.9 (0.7)	1.0 (0.7)	0.9 (0.8)	1.1 (0.6)	1.1 (0.6)
PAS-II, 0-10	3.3 (2.6)	3.4 (2.5)	3.5 (2.2)	3.1 (2.4)	3.7 (2.0)	3.6 (1.6)
SF-36 PCS, 0-100	39.4 (11.9)	40.3 (11.7)	**37.5 (12.1)**	**40.0 (12.9)**	35.4 (10.2)	35.2 (9.0)
SF-36 MCS, 0-100	44.1 (13.2)	45.3 (11.9)	48.9 (10.5)	47.2 (12.1)	48.7 (11.0)	49.6 (9.7)
RDCI, 0-9	2.2 (1.7)	2.4 (1.6)	**1.9 (1.6)**	**2.4 (2.1)**	2.0 (1.5)	2.1 (1.8)
PSD, 0-31	12.8 (9.5)	12.5 (9.2)	**10.2 (7.1)**	**8.3 (7.4)**	**14.0 (5.9)**	**10.9 (6.5)**
Symptoms, % (N)						
Muscle weakness	64.1 (39)	64.7 (34)	**71.2 (52)**	**47.6 (42)**	78.9 (19)	80.0 (15)
Muscle pain	57.9 (38)	47.1 (34)	57.7 (52)	48.8 (43)	68.4 (19)	46.7 (15)
Rash	34.2 (38)	21.2 (33)	21.6 (51)	14.3 (42)	42.1 (19)	33.3 (15)
Photosensitivity	24.3 (37)	24.2 (33)	25.0 (52)	21.4 (42)	42.1 (19)	26.7 (15)
Joint pain	59.5 (37)	57.1 (35)	60.8 (51)	42.9 (42)	52.6 (19)	46.7 (15)
Joint swelling	27.0 (37)	24.2 (33)	23.5 (51)	23.8 (42)	31.6 (19)	40.0 (15)
Dyspnea	31.6 (38)	29.4 (34)	25.0 (52)	23.3 (43)	21.1 (19)	13.3 (15)
Pleurisy	13.5 (37)	14.7 (34)	7.8 (51)	7.1 (42)	5.3 (19)	0 (15)
Comorbidities Hx, % (N)						
Pulmonary disorder	28.6 (42)	33.3 (42)	**26.3 (57)**	**43.6 (55)**	**15.8 (19)**	**47.4 (19)**
Hypertension	59.5 (42)	64.3 (42)	**38.6 (57)**	**57.1 (56)**	63.2 (19)	84.2 (19)
Myocardial infarction	4.8 (42)	7.1 (42)	5.3 (57)	14.5 (55)	0 (19)	10.5 (19)
GI disorder	47.6 (42)	47.6 (42)	**45.6 (57)**	**64.3 (56)**	47.4 (19)	57.9 (19)
Renal disorder	14.3 (42)	14.3 (42)	**8.8 (57)**	**23.6 (55)**	5.3 (19)	26.3 (19)
Fracture	4.8 (42)	14.3 (42)	**10.5 (57)**	**29.1 (55)**	10.5 (19)	21.1 (19)
Raynaud's	18.9 (37)	18.4 (38)	17.6 (57)	17.3 (52)	10.5 (19)	21.1 (19)
Depression	40.5 (42)	45.2 (42)	36.8 (57)	45.5 (55)	26.3 (19)	52.6 (19)
Diabetes	21.4 (42)	31.0 (42)	**8.8 (57)**	**20.0 (55)**	15.8 (19)	26.3 (19)
Cancer	21.4 (42)	26.2 (42)	**14.0 (57)**	**30.9 (55)**	15.8 (19)	36.8 (19)

PRO=patient-reported outcome; VAS=visual analog scale; HAQ=Health Assessment Questionnaire; PAS=Patient Activity Scale; SF-36=Short Form 36; PCS=Physical Component Summary; MCS=Mental Component Summary; RDCI=Rheumatic Disease Comorbidity Index; PSD=polysymptomatic distress; GI=gastrointestinal.

Table 3. Observation time, IIM subtype, and calendar year at study entry by treatment trajectory group.

	Stayed on Nonconventional Treatment	Stayed on Conventional Treatment	Switched (Nonconventional to Conventional)	p
Time from baseline to last observed treatment, years	3.5 (3.7)	3.6 (3.5)	6.2 (6.1)	0.04
IIM subtype, %				
DM	45	42	37	0.58
PM/IMNM	29	42	42	
Unspecified	26	16	21	
% before 2010 at baseline	57	56	79	0.19

FORWARD
The National Databank for Rheumatic Diseases