OMERACT 2018 Modified Patient-reported Outcome Domain Core Set in the Life Impact Area for Adult Idiopathic Inflammatory Myopathies

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ABSTRACT. ***Objective.*** To present and vote on a myositis modified patient-reported outcome core domain set in the life impact area at the Outcome Measures in Rheumatology (OMERACT) 2018.

Methods. Based on results from international focus groups and Delphi surveys, a draft core set was developed.

Results. Domains muscle symptoms, fatigue, level of physical activity, and pain reached ≥ 70% consensus and were mandatory to assess in all trials. Domains lung, joint, and skin symptoms were mandatory in specific circumstances. This core set was endorsed by > 85% at OMERACT 2018.

Conclusion. We propose a life impact core set for patients with idiopathic inflammatory myopathies and will proceed with instrument selections. (First Release February 15 2019; J Rheumatol 2019;46:1351–4; doi:10.3899/jrheum.181065)

Key Indexing Terms:
MYOSITIS
OMERACT
DELPHI
PATIENT-REPORTED OUTCOMES
OUTCOME ASSESSMENT

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Support for this project comes from a grant from the Korea Health Technology R&D Project through the Korea Health Industry Development Institute, funded by the Ministry of Health & Welfare, Republic of Korea (grant number: H114C1277); The Swedish Rheumatism Association; The Börje Olhagen foundation (supported by grants provided by the Stockholm County Council ALF project); the Diplomat Specialty Infusion Group; Option Care; and Nufactor Inc.

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Accepted for publication December 21, 2018.

Idiopathic inflammatory myopathies (IIM) are rare inflammatory autoimmune diseases, commonly with primary involvement of the skeletal muscle[1]. IIM are multisystem diseases often extending beyond muscle weakness and may involve the lungs, joints, skin, and the gastrointestinal tract[1].

Patients experience limitation in activities of daily living and quality of life[2,3]. To evaluate treatment outcomes and disease progression, it is important to include patient-reported outcome measures (PROM). The International Myositis Assessment Clinical Study group (IMACS) has developed a core set to measure disease activity, mainly focusing on objective assessments[4,5]. However, there is no consensus on

how to assess PROM. The aim of the Outcome Measures in Rheumatology (OMERACT) Myositis Special Interest Group (SIG) is to identify core domains and instruments that reflect the life impact area in IIM, with strong patient participation (Figure 1). The myositis SIG includes an international multiprofessional group of patient research partners (PRP), healthcare providers (HCP)/researchers, and methodological experts. Our previous work included a systematic literature review of PROM, focus groups, and 1 modified Delphi survey[6,7,8,9]. The aim of OMERACT 2018 was to present and seek voting on a preliminary myositis-modified core domain set in the life impact area and to define a research agenda to develop PROM.

MATERIALS AND METHODS

Two modified Delphi surveys (Delphi 2 and 3) preceded the OMERACT 2018 meeting. Given that each of the 3 surveys did not include the exact same participants because of the anonymity, and that the lists of domains were not identical, we considered these surveys to be "modified" Delphi surveys.

Delphi 2, which was administered to patients, caregivers, HCP, and regulatory agency representatives, included the 19 domains from the first Delphi that reached 70% consensus[9]. Following the second Delphi, the SIG sought advice and expertise from the OMERACT Executive Committee and the technical advisory group on how to proceed for the third Delphi.

Delphi 3 included 16 domains and was also distributed to patients, caregivers, HCP, and regulatory agencies (Table 1), and was designed to ask participants to rate domains on a scale from 1 (not important) to 10 (critically important). For domains that achieved ≥ 70%, participants were asked to rank domains as 1 (domain is mandatory and should be used in every clinical trial), 2 (an optional item, considered in some circumstances but not mandatory), or 3 (more research is needed before a decision can be made). The rankings 1 (inner circle), 2 (middle circle), and 3 (outer circle) mirror the 3 layers in the OMERACT onion.

The surveys were developed and distributed through the Qualtrics system at the Johns Hopkins medical center. Patients were identified through patient organizations, medical records, or quality registries and were contacted by e-mail or text message providing the Qualtrics link. Patients were asked to send the link to their significant other or caregiver. HCP were identified by myositis networks. Completing the survey equaled informed consent. Information on how to withdraw participation was provided. The study was approved by the ethical review board in the participating research sites where it was obligated [Karolinska Institutet Institutional Review Board (IRB) number: 2017/1697-31; Johns Hopkins Hospital IRB number: IRB00098790; Seoul National University Hospital IRB number: 1312-009-537].

Statistical analysis. Demographic data are presented as mean (SD) and percent.

RESULTS

Results of the 3 modified Delphi surveys. The first Delphi resulted in 19 domains reaching consensus of > 70%. Domain social support was considered a contextual factor and was not included in the following Delphi surveys. The second Delphi resulted in 3 domains with > 70% consensus, thus moving these domains to the inner circle (muscle symptom, fatigue, and level of physical activity). In the third Delphi, 1 additional domain (pain) reached more than 70% consensus and was ranked as mandatory to be used in all trials, thus also moving to the inner circle. Two other domains reached 70% consensus and were designated to be placed in the middle circle (lung, joint). After extensive discussions within the group, the domains in the middle circle were considered organ-specific, and not present in all IIM. In this context, the myositis SIG decided that skin symptoms should be considered in the middle circle as well. In Delphi I, 69% ranked skin as important, although only 50% reported a diagnosis of dermatomyositis (DM). The results in Delphi 2 were similar. The myositis SIG suggested that skin should be added to the middle circle, which was endorsed by the myositis SIG pre-session.

The OMERACT 2018 SIG pre-session. There were 29 participants, divided into 2 PRP, 2 regulatory agency representa-

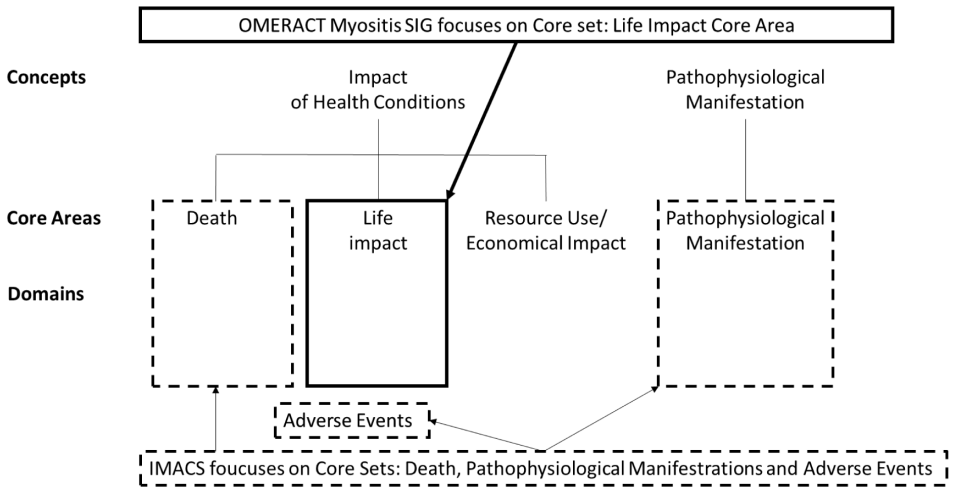

Figure 1. Focus of the OMERACT myositis SIG in relation to the IMACS core set. The OMERACT SIG focus on the life impact area while the IMACS has developed core sets within the areas of death, pathophysiological manifestations, and adverse events. OMERACT: Outcome Measures in Rheumatology; SIG: Special Interest Group; IMACS: International Myositis Assessment Clinical Study.

Table 1. Participants in the 3 modified Delphi surveys.

Variables	Delphi 1	Delphi 2	Delphi 3
Participants, n	643	638	541
Patients	643	510	410
Caregivers	0	27	20
Healthcare providers	0	101	109
Regulatory agencies	0	0	2
Patient demographics			
Age, yrs, mean (SD)	54.5 (13.3)	55 (13.5)	54 (12.7)
Disease duration, yrs, mean (SD)	8.1 (7.8)	7.9 (13.7)	7.1 (8.2)
PM/DM/other, n	290/353	212/238/60	159/200/51
Women/men, %	81/19	73/27	83/17

DM: dermatomyositis; PM: polymyositis.

tives, 1 researcher, 2 methodologists, and 22 HCP (17 physicians, 3 physician fellows, and 2 occupational therapists/physical therapists). The session started with a presentation by 2 SIG PRP, 1 with DM and 1 with polymyositis. They shared facts, challenges, and limitations of living with myositis. Although they have different types of myositis, they both experience fatigue and joint symptoms and deteriorating levels of physical activity. Their stories reflected the many faces of myositis that limit people in different ways. A short background of previous work and results from the second and third modified Delphi were presented. The preliminary modified core domain set in the life impact area was presented, followed by preliminary voting. A majority in the SIG session endorsed the preliminary core set.

The OMERACT 2018 myositis SIG voting session. The plenary voting session endorsed the inner circle by 96% consensus, the middle circle by 98%, and the outer circle by 86%.

In response to discussions at OMERACT 2018, the OMERACT onion was adjusted and approved. This adjustment adds another layer to the inner circle of the OMERACT onion structure to allow specification of certain domains as mandatory in specific circumstances.

Following the updated OMERACT onion, the domains in the middle circle (symptoms in lung, joint, skin) were moved to the inner circle (mandatory in specific circumstances; Figure 2).

The myositis SIG was also endorsed to continue toward developing PROM to assess the inner circle domains in the research agenda for OMERACT 2020.

The myositis SIG will review potential PROM and determine whether they meet the OMERACT Filter 2.1[10,11].

DISCUSSION

The proposed core domain set for life impact reflects the preferences and perspectives of many groups, most importantly patients with IIM. In the process of conducting multiple surveys, we observed large discordance between the patient and HCP perception of domain importance. A strength of our study was the large number of participants responding to all the Delphi surveys with a multilingual coverage of 5 countries in 4 continents.

Inner circle of the core domain set (mandatory in all trials). Because muscle symptoms are cardinal features in IIM, their presence in the inner circle is obvious. Objective muscle weakness is a classification criterion for IIM[12] and included in the IMACS core set of disease activity[4]. The exact patients' definition of limitation in daily activities, muscle weakness, low muscle endurance, etc., is still to be determined. Fatigue is a common symptom in several rheumatic diseases[13,14,15] and has been reported in only a few studies in IIM[3,16]. However, fatigue is a multifaceted symptom and it is not known how patients with myositis experience fatigue. Level of physical activity was also included in the inner circle, rated as high importance by all groups including patients, their caregivers, and HCP. One explanation for this consensus could be an increasing awareness of the health-enhancing effects of physical activity. Pain was also rated as a domain that is mandatory to measure in research studies. Studies have reported higher pain levels in patients with IIM than population-based reference values[3,16]. Pain is a multimodal symptom, and knowledge of pain experienced by patients with myositis is limited.

The domains in the inner circle (mandatory in specific circumstances), i.e., symptoms in the lung, joint, and skin, constitute symptoms that are more specific to different disease subsets of IIM. According to our expertise, these domains should be measured in trials targeting either or all these symptoms. There is a need to define what PROM should be incorporated to identify these symptoms.

For the next OMERACT meeting, the myositis SIG needs to go through existing PROM, and further qualitative research is needed to understand the in-depth meaning of the inner circle core domains and how to measure them.

We propose a preliminary life impact core set for patients with IIM, derived by conducting international focus groups and 3 rounds of modified Delphi with several hundred patients with IIM. We will proceed with instrument selection for each of the domains in the inner circle using the OMERACT 2.1 Filter[11].

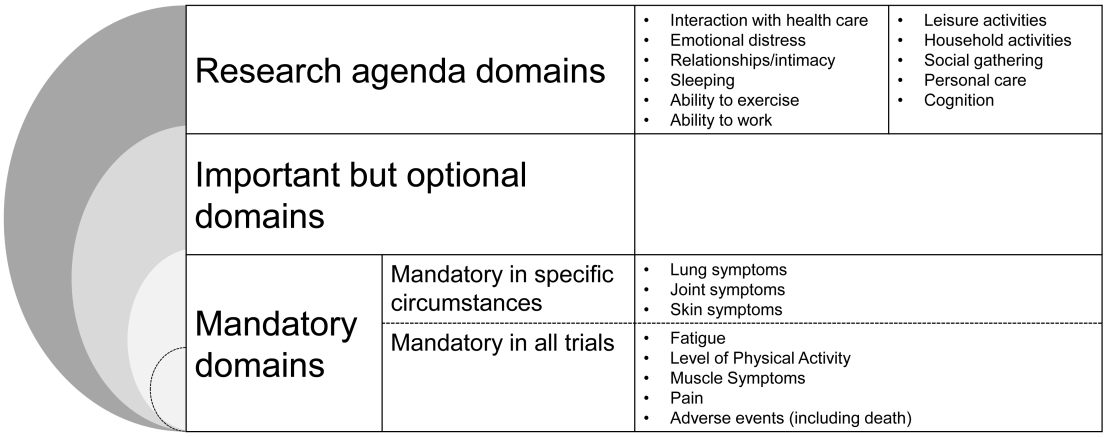

Figure 2. The OMERACT Onion: organization of domains. Myositis working group. OMERACT: Outcome Measures in Rheumatology.

Knowledge translation. The modified life impact core set for patients with IIM will be presented at patient conferences, IMACS meetings, and rheumatology conferences. Patients and experts within the field of myositis will be closely involved in the PROM selection. The PRO core set will be published in a scientific journal, as well as included in review publications on outcome measures in IIM.

ACKNOWLEDGMENT

We thank all participating patients, caregivers, healthcare providers, and IMACS for scientific advice. We acknowledge The Myositis Association, the Netherlands' patient association ("Spierziekten Nederland"), the myositis association of Australia, and Perron Institute of Neuroscience Research, and the IMACS for distributing the Delphi surveys.

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