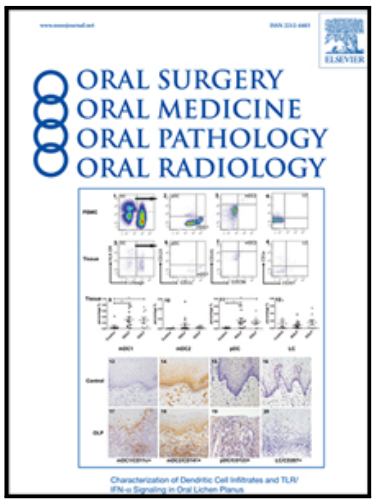

World Workshop on Oral Medicine VIII: Development of a Core Outcome Set for Oral Lichen Planus: A Consensus Study

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World Workshop on Oral Medicine VIII: Development of a Core Outcome Set for Oral Lichen Planus: A Consensus Study

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ABSTRACT

Objective: A core outcome set (COS) is the minimum agreed data set required to be measured in interventional trials. To date, there is no COS for oral lichen planus (OLP). This study aims to show the final consensus project which brings together the results of the previous stages and how the COS for OLP was developed.

Study Design: Fifteen outcome domains were previously identified following a systematic review of existing interventional studies on OLP and a qualitative study involving patients with this condition. Delphi-style clicker sessions were conducted at the World Workshop on Oral Medicine VIII and the 2022 American Academy of Oral Medicine Annual Conference. Following this, OLP patients from the Oral Medicine unit of the University of Cork, Ireland, also completed the process. A further round of interactive consensus led to the final COS.

Results: The consensus processes led to a COS of 11 outcome domains to be measured in future trials on OLP.

Conclusion: A COS is developed by consensus to help reduce the heterogeneity of outcomes measured in interventional trials. This will allow future pooling of outcomes and data for meta-analyses. The consensus process followed the Core Outcome Measures in Effectiveness Trials (COMET) guidelines and involved the agreement of relevant stakeholders, including patients with OLP. This project shows a methodology that could be used for future COS development.

KEYWORDS

Core outcome set; oral lichen planus; outcome domains; outcome measures; consensus.

INTRODUCTION

Oral lichen planus (OLP) is a chronic inflammatory condition of the oral mucosa with a potential for malignant transformation.[1-4] It affects approximately 1% of the global population and usually presents in women after the fourth decade of life.[5] The most aggressive forms of OLP can cause pain, soreness, itching, and a burning sensation, which may negatively impact oral function and may decrease the patient's quality of life.[6,7] The treatment of OLP is intended to reduce symptoms.[8,9] Topical corticosteroids are the gold standard, but other topical, systemic, and non-pharmacological treatments such as photobiomodulation therapy are available.[10-13]

Outcomes are variables that are monitored during a study to reflect the impact of a given intervention on patients' health.[14] Systematic reviews on the treatment of OLP have highlighted the heterogeneity in terms of clinician- and patient-reported outcomes among the included studies.[11,15] This heterogeneity makes it difficult to perform meta-analyses and establish the best evidence-based treatment protocol for OLP.[11] The development of a COS would allow for the pooling of homogenous data for meta-analyses and yield a higher quality of evidence for clinicians to access when making treatment decisions for patients with OLP.[16] To date there is no agreement as to which outcomes should be included in a COS for OLP. The World Workshop on Oral Medicine (WWOM) Outcomes Initiative for the Direction of Research (WONDER Project) was created to develop a COS for conditions managed by the oral medicine specialty using an established methodology from the Core Outcome Measures in Effectiveness Trials (COMET) group.[14]

A three-phase project to develop a COS for OLP was initiated as part of the WWOM VIII. The first phase of this project was a systematic review to identify the outcomes collected in interventional studies on OLP (cross-reference paper 1). The second phase was a qualitative study of patients with OLP to identify other important patient-reported outcomes (cross-reference paper 2). The third phase (presented here) was to determine the COS after reaching a consensus among all the stakeholders involved.

This study aimed to summarize the findings from the first two phases and show how these results were used to inform the final consensus process to determine the COS for future trials on OLP.

MATERIALS AND METHODS

The protocol of this study was previously registered in the COMET Database (https://www.comet-initiative.org/Studies/Details/1558) and followed the COMET guidelines.[14] This study was the third stage of a three-phase project to determine the COS for OLP within the WONDER Project.

The methodology for developing a COS is established and includes a three-phase process, i.e., identification of existing knowledge, patient involvement, and the consensus process.[16]

Identification of existing knowledge

A systematic review was undertaken to establish a list of outcomes measured in interventional trials for OLP (cross-reference paper 1). This yielded an extensive list of

69 individual outcomes, which were grouped into appropriate domains by the WWOM VIII OLP Working Group (RML-P, MDF, SSKR, JAV, CB, HD, JR-S, JT).

Patient involvement

A qualitative study involving patients with OLP was conducted (cross-reference paper 2). The patients had OLP of varying severity treated with topical or systemic therapy. Time since diagnosis was also considered including newly diagnosed patients and longstanding patients. As well as discussing the experiences of living with OLP, outcome measures were discussed. The list of outcome domains was introduced for patient feedback. The patients agreed on all the domains and added an additional outcome not previously included.

Consensus

An international group of experts in Oral Medicine consisted of 12 members who attended the WWOM VIII held in Memphis, USA, on May 2 and 3, 2022. The group members came from seven different countries, and their characteristics are shown in Table 1. This working group discussed all the domains identified in the first (cross-reference paper 1) and second (cross-reference paper 2) phase of the project. Once the group assessed the adequacy of these 15 domains, the survey questions for the voting sessions and the information participants would receive were drafted.

The consensus process was achieved through a four-stage approach. Before conducting the surveys, participants received both verbal and written information explaining the process. Open communication enabled any concerns to be raised.

Stage 1: WWOM VIII participants

The first clicker session was conducted on Tuesday, May 3 at the WWOM VIII in Memphis, TN, USA. This was a pilot session to test the process and gain feedback from participants to inform the main consensus process. A group of Oral Medicine experts, all participants in WWOM VIII (Steering Committee, Consultants, Reviewers, Assistant Reviewers, and Observers) took part in a round of interactive voting.

Stage 2: 2022 AAOM Annual Conference participants

The second clicker session was conducted on Friday, May 6 at the 2022 AAOM Annual Conference in Memphis, TN, USA. All those participants attending this meeting were invited to participate and vote. The 15 domains were voted on using the 9-point Likert scale previously described.

Stage 3: Patient focus groups

Ten patients diagnosed with OLP from the Oral Medicine Unit of Cork University Dental School and Hospital (Ireland) participated in an interactive voting round (cross-reference paper 2). The 15 domains were voted on using the same 9-point Likert scale.

Stage 4: Final consensus

Online interactive meetings were carried out with the WWOM VIII OLP Expert Working Group to discuss the results from the initial 3 stages of voting. A final vote on the outstanding 'unclear' domains was carried out. The domains for inclusion in a COS were determined.

Resources to conduct the clicker sessions

Mentimeter® (Stockholm, Sweden), an eponymous application that can be embedded in presentations to provide real-time feedback, was used to carry out the interactive clicker process. Participants connected to the website via their smartphones or other internet device using a previously established code. The questions were projected on the presentation slides and could also be viewed on the participant's devices. At first, participants were asked about their continent of origin and their current position. Subsequently, they were asked how important the assessment of each of the previously identified domains was to them. Participants gave their opinion about the domain through their devices. Once the participants started voting, the results could be visualized on the presentation slides. Following the conclusion of voting for each domain, the data were saved.

Methods of scoring

A 9-point Likert scoring system allowed the participant to grade the importance of collecting such a domain. In this system, a score of 1 to 3 means that an outcome is of limited importance, 4 to 6 important but not critical, and 7 to 9 critical. This framework is recommended by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group for assessing the level of importance of research evidence.[18]

Consensus definition

Consensus on the inclusion of an outcome in the COS was defined as 70% or more of respondents rating it 7 to 9 and less than 15% rating it 1 to 3. Consensus on the non-inclusion of an outcome in the COS was defined as 70% or more rating it 1 to 3 and less

than 15% rating it 7 to 9. All other distributions of scores were considered to indicate a lack of agreement for the inclusion of a given outcome in the COS.[17]

To reach a consensus, the arithmetic mean between the response rates of OLP patients and healthcare providers who attended the 2022 American Academy of Oral Medicine (AAOM) Annual Conference in Memphis, TN, USA, was calculated. To establish whether the domains with a lack of agreement were selected, a final round of voting took place following live interactive discussions among the members of the WWOM VIII OLP Expert Working Group. In this voting stage, the members were instructed to answer "yes/in" or "no/out" depending on if they felt the domain should be included in the final COS for OLP. Consensus to include an outcome was achieved only when 70% or more of the participants voted "yes". Outcomes with an agreement of less than 70% were not included in the final COS.

Statistical analysis

A descriptive statistical analysis of the data was performed. The number and percentage of participants who responded that an outcome domain was of limited importance, important but not critical, and critical were evaluated. The arithmetic mean of the results obtained at the 2022 AAOM Annual Conference and from patients with OLP was calculated using Microsoft© Excel for Mac.

RESULTS

Final domains

The WWOM VIII OLP Working Group classified the 69 final outcomes obtained from the systematic review into 14 outcome domains. In the second phase which comprised

of the interviews with OLP patients, a new and previously unidentified theme named "knowledge and understanding of healthcare practitioners, family and friends" was identified. Therefore, this domain was added to the 14 previously identified domains, resulting in the following 15 potential domains:

- Appearance of lesions,
- Severity of lesions,
- Symptoms,
- Function,
- Social impact,
- Psychological impact,
- Patient support from family and friends,
- Compliance and tolerability,
- Overall patient satisfaction,
- Adverse events,
- Economic impact,
- Timelines,
- Need for rescue medication,
- Biomarkers post-treatment initiation, and
- Histopathology post-treatment initiation.

Review of identified domains, drafting of pre-survey information, and interactive clicker process questions

The WWOM VIII OLP Expert Working Group reviewed and confirmed the final domains identified. Based on these domains, the survey questions (Table 2) were drafted to assess the importance of collecting these domains in future clinical trials on

the treatment of OLP. Questions were drafted in the following format: In every future trial testing a treatment for OLP, how important is it to measure, e.g., the appearance of lesions? This format was used to emphasize the importance that such outcomes should be collected in all clinical studies on the treatment of OLP. Explanatory notes accompanied these questions to help participants relate the domain to the associated outcomes. In addition, an information sheet was handed out before the clicker session so that participants would have sufficient information about the objectives of the project, what a COS means, the stages for defining a COS, the definition of the consensus process, the grading of the questions, and the evaluation of the results (Supplementary file 1).

Results of the WWOM VIII clicker session (stage 1)

Twenty-nine people participated in the clicker session held at WWOM VIII in Memphis, TN, USA. Of the 27 participants who were connected at the start of the clicker session, 23 were Oral Medicine specialists, one participant was an Oral Medicine trainee/resident, two participants had another dental specialty, and one participant was an allied healthcare provider. Two further participants joined after the collection of baseline demographics. The session prompted much debate around the wording of the questions and the information the participants needed before being able to vote. This pilot session allowed the presentation and clicker voting to be trialed, leading to further improvements in the delivery of the clicker session before the main event.

After applying the consensus criteria, the results of the clicker session (Table 3) showed the following domains must be included in the COS for OLP based on the voting of the WWOM VIII participants:

- Appearance of lesions,
- Severity of lesions,
- Symptoms,
- Function,
- Psychological impact,
- Patient compliance and tolerability,
- Overall patient satisfaction,
- Adverse events, and
- Timelines.

The following domains lacked consensus for inclusion:

- Social impact,
- Patient support from family and friends,
- Economic impact,
- Need for rescue medication, and
- Biomarkers post-treatment initiation.

Only one domain was voted as not for inclusion in the COS:

- Post-treatment initiation histopathology.

Results of the AAOM meeting clicker session

Ninety-six participants took part in this session. Of the 84 participants who accessed the voting system at the beginning of the session, 64 were from America, 9 from Europe, 5 from South America, 5 from Asia, and 1 from Australia. Ninety-one participants recorded their current position. Of these, 46 were university or hospital-based Oral Medicine specialists, 12 were general dentists, 10 were dentists within another dental specialty, 9 were Oral Medicine trainees or residents, 7 were Oral Medicine specialists in private practice, 2 were allied healthcare providers, 1 was a researcher in another specialty, and 4 had other different current positions.

By applying the consensus criteria, participants in this clicker session voted that the following domains should be included in the COS for OLP treatment (Table 4):

- Appearance of lesions,
- Severity of lesions,
- Symptoms,
- Function,
- Psychological impact,
- Patient compliance and tolerability,
- Overall patient satisfaction,
- Adverse events,
- Timelines, and
- Need for rescue medication.

The following domains lacked consensus for inclusion:

- Social impact,
- Patient support from family and friends,

- Economic impact,
- Biomarkers post-treatment initiation, and
- Histopathology post-treatment.

Patient group consensus

Ten patients with OLP participated in this session. Considering the consensus criteria, patients felt the following outcome domains should be included in the COS for the treatment of OLP (Table 5):

- Appearance of lesions,
- Severity of lesions,
- Symptoms,
- Function,
- Social impact,
- Psychological impact,
- Patient compliance and tolerability,
- Overall patient satisfaction, and
- Timelines.

The following domains lacked consensus for inclusion:

- Support from family and friends,
- Economic impact,
- Adverse events,
- Need for rescue medication,

- Biomarkers post-treatment initiation, and
- Histopathology post-treatment initiation.

Average of the results of the 2022 AAOM Annual Conference clicker session and OLP patients survey

The voting results from the 2022 AAOM Annual Conference were compared with those from the OLP patient group and, despite the difference in group sizes, an equal weighting was given. The rationale for this decision was to ensure that the patients' voice was supported throughout the process. A consensus was achieved to include the following domains in the COS (Table 6):

- Appearance of lesions,
- Severity of lesions,
- Symptoms,
- Function,
- Social impact,
- Psychological impact,
- Patient compliance and tolerability,
- Overall patient satisfaction, and
- Timelines.

The other domains lacked consensus for inclusion.

Final consensus stage

To further discuss the results to date and reach a consensus for the unknown domains, an interactive online meeting was held. The 12 members of the WWOM VIII OLP Expert Working Group and 3 additional investigators (HD, AF, and CH) attended, and the 6 unclear domains were discussed with a final in/out voting. Disagreements were resolved by subsequent discussions and rounds of voting. This led to the final list of included domains for the COS for OLP (Figure 1):

- Appearance of lesions,
- Severity of lesions,
- Symptoms,
- Function,
- Social impact,
- Psychological impact,
- Patient compliance and tolerability,
- Overall patient satisfaction,
- Adverse events,
- Timelines, and
- Need for rescue medication.

DISCUSSION

The lack of high-quality evidence for interventions in Oral Medicine is secondary to various methodological limitations in trials including the heterogeneity of outcome measures. A COS aims to reduce the heterogeneity of outcomes measured which in time will lead to the pooling of data for meta-analysis.

Medical, surgical, and dental specialties have been working in this research area supported by the COMET initiative. Whilst there is variety in the detail of the methodology for COS development, the following areas are universally accepted: 1) identification of existing knowledge, 2) patient involvement, and 3) consensus.

The WWOM registered the WONDER project with the COMET initiative in 2020 to develop a COS for OLP and dry mouth as part of the WWOM VIII. This promoted a unique opportunity to develop a concise methodology for developing COS projects in Oral Medicine and to perform a live interactive process via clickers at an international meeting of experts. The final consensus stages involved patients with OLP and healthcare providers from around the world who attended the WWOM VIII and the 2022 AAOM Annual Conference. The results of this consensus have made it possible to determine which outcome domains should be part of the COS for evaluating the treatment of OLP.

There are various methods for gaining consensus as part of COS development. In most cases, large-scale Delphi questionnaires or expert panel meetings are used.[14] There are several issues to consider when conducting large-scale Delphi consensus including the lack of live interaction between stakeholders, the cost of running the studies, and the time-consuming nature of online or paper questionnaires. These issues mean that attrition of participants is a disadvantage of this technique.

In this study, a face-to-face meeting method was used, taking advantage of the WWOM VIII and the AAOM Annual Conference, which were held in Memphis, TN, USA, on May 1–7, 2022. The two meetings provided an opportunity to include a broad group of

Oral Medicine experts that may otherwise have been difficult to engage in the process. The opinion of patients with OLP was also elicited.

The first consensus stage was a pilot run of the clicker session with a group of Oral Medicine specialists. This gave the participants a chance to trial the technology and the timings. In addition, the interactive nature of the pilot process allowed participants to give live feedback and suggestions relating to the outcomes under discussion and to consider the patients' viewpoints from the preliminary patient focus groups. Following this, an information sheet about the project was uploaded (Supplementary file 1) to the AAOM Annual Conference app, and paper copies were distributed throughout the lecture hall. This gave participants a brief synopsis of the project so that they were prepared as the voting process started. The results from the clicker session were saved, and the process was later repeated with the patient focus group.

By taking both the patients' voting outcomes along with the AAOM Conference voting results and equally weighting these to keep the patients' opinions throughout the process, a further discussion on the remaining 6 unclear outcomes was conducted. Of these, none were voted to be of critical importance by the patients:

- Support from family and friends,
- Economic impact,
- Adverse events,
- Need for rescue medication,
- Biomarkers post-treatment initiation, and
- Histopathology post-treatment initiation.

At the final discussion, clear unanimous voting was easily achieved for the exclusion of the 'histopathology post-treatment initiation' and 'support from family and friends', as well as for the inclusion of 'adverse events' and 'need for rescue medication'. The domain 'economic impact' was discussed, and it was felt that this domain would be interpreted differently depending on geographical location. For example, the cost of medication would not be a consideration for patients in a country with free access to healthcare, but it would be a consideration for healthcare providers and patients in a private or health insurance setting. It was decided that treatment efficacy should be judged on the clinical effect on patients and that economic considerations would only be required if a specific treatment was found to be successful. Therefore, this domain could be added to the COS in particular trials but would not be necessary for every trial. This domain was not included in the final COS.

The domain 'biomarkers post-treatment initiation' also prompted debate. As a domain in the context of an outcome measure for OLP, 'biomarkers' was chosen to cover all possible measurable biological outcomes, for instance, blood tests or saliva tests. Examples of biomarkers include everything from pulse rate and blood pressure through basic chemistries to more complex laboratory tests of blood and other tissues.[14] However, it could be confused with the measurement of a particular biomarker for OLP, which does not currently exist. It was decided that if a biological test was required to measure the effect of treatment, then it would be specific to the treatment and should not be necessary for all potential treatments in a trial setting. As such this domain was not included in the final COS.

This COS was developed following the recommendations from COMET, however, as a project, there are several limitations. Ideally, a consensus process should involve a wide variety of stakeholders such as patients, specialists (Oral Medicine, Oral Pathology, dentistry), researchers (with experience in trials), and industry (pharmaceutical companies with trial experience). In this study, no industry or pharmaceutical companies were involved. Whilst the number of patients who voted was only 10 (compared to the 96 participants at the clicker event), the patients' opinions were supported throughout the process. The patients were enrolled from only one unit in Cork, Ireland, and the opinions of patients from other geographical locations may have led to differing results. Most participants at the AAOM and WWOM VIII in this consensus process were clinicians and were from the USA. A worldwide approach would increase the external validity of the opinions expressed during the clicker process. Lastly, although most of the participants answered all the questions in the sessions, the results showed that not all participants answered all the questions in the clicker sessions, which could have been due to delays or loss of internet connection.

CONCLUSIONS

Outcome measures are an important way of assessing a treatment effect. There are a variety of considerations when choosing outcome measures, including 'what' to measure, 'how' to measure, and 'when' to measure. A COS is an agreed minimum set of outcomes that should be measured in all future treatment trials for a particular condition, and COS development is a way of improving our future evidence base by reducing heterogeneity. This COS for OLP, developed by consensus, aims to improve the future evidence base for treating OLP. In addition, the methodology developed for

this project could be used to guide future COS projects for other conditions managed by the Oral Medicine specialty.

According to the results of this consensus, future clinical trials on the treatment of OLP should include outcomes that evaluate the appearance of lesions, severity of lesions, symptoms, function, social impact, psychological impact, patient compliance and tolerability, overall patient satisfaction, adverse events, timelines, and need for rescue medication. This has established the 'what' to measure. The next stage is to agree on the 'how' to measure and 'when' to measure stages, and these projects will follow in the future.

FUTURE RESEARCH

The next stage of this COS development is to agree on the measurement tools. This project will follow the methodology and guidance of COSMIN (COnsensus-based Standards for the selection of health Measurement Instruments).

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FIGURE LEGENDS

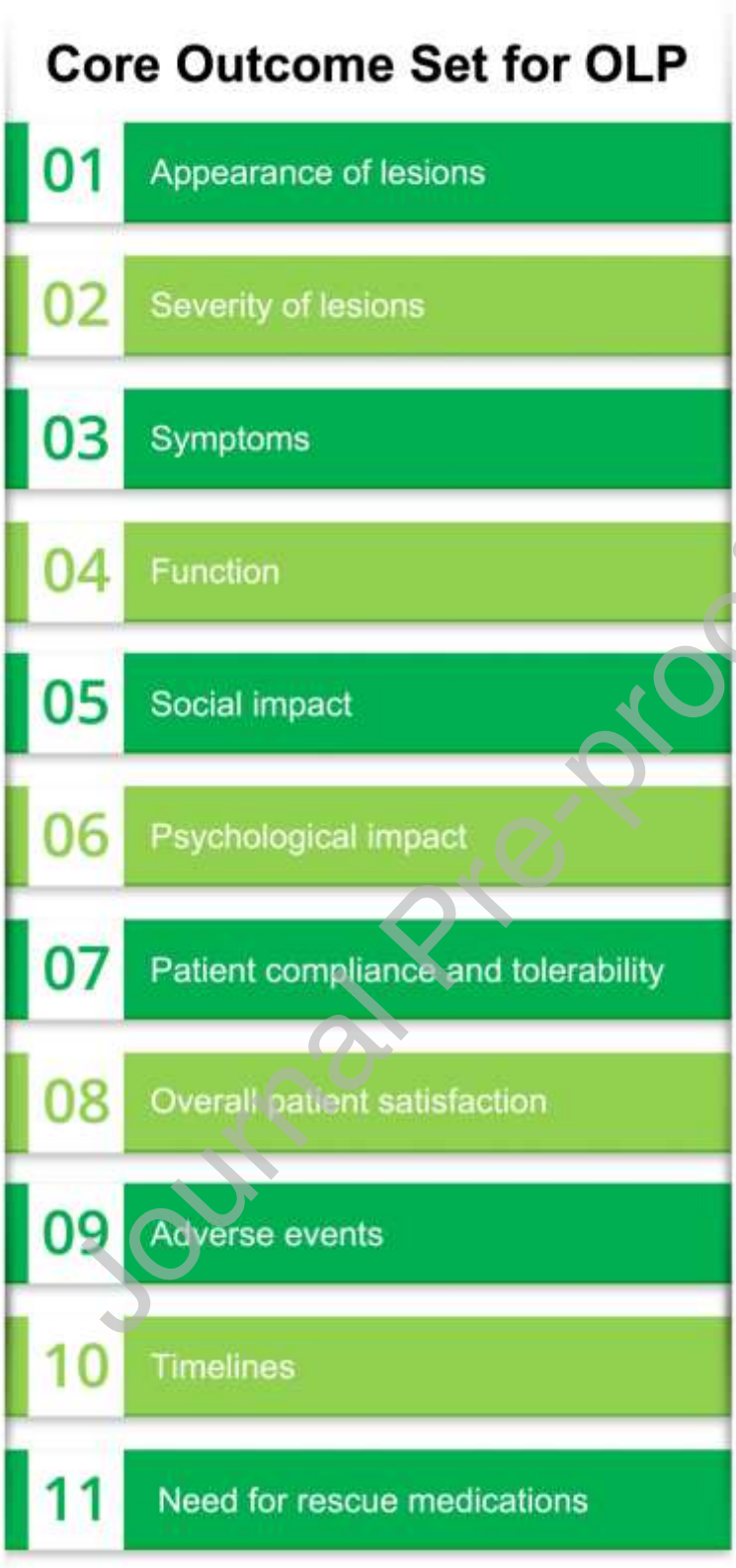

Figure 1. Final list of included domains for the Core Outcome Set (COS) for oral lichen planus.

SUPPLEMENTARY MATERIALS

Supplementary file 1. Information document to be handed out prior to the clicker session.

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Table 1. Members of the World Workshop on Oral Medicine VIII OLP Expert Working Group

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Nancy W Burkhart	USA	The International Oral Lichen Planus Support Group, Texas A&M University College of Dentistry, Dallas, TX, USA	Oral Medicine
Márcio Diniz-Freitas	Spain	Special Care Unit, OMEQUI Research Group, School of Medicine and Dentistry, Health Research Institute of Santiago de Compostela (IDIS), Santiago de Compostela University, Santiago de Compostela, Spain	Oral Medicine Special Care Dentistry
Rosa María López-Pintor	Spain	ORALMED Research Group, Department of Dental Clinical Specialties, School of Dentistry, Complutense University, Madrid, Spain	Oral Medicine
Richeal Ni Riordain	Ireland	College of Medicine and Health, Cork University Dental School and Hospital, University College Cork, Cork, Ireland	Oral Medicine
Jairo Robledo-Sierra	Colombia	CES University, Medellin, Colombia	Oral Medicine
Jane Setterfield	UK	Department Oral Medicine, Guy's Hospital, Guy's and St Thomas' NHS Foundation Trust, London, UK Centre for Host-Microbiome Interactions, Faculty of Dentistry, Oral & Craniofacial Sciences, King's College London, London, UK St John's Institute of Dermatology, London, UK	Oral Medicine Dermatology
Shilpa Shree Kuduva	India	Department of Oral Medicine and Radiology, Tamil Nadu Government Dental College and	Oral Medicine Oral and

Ramesh		Hospital, Chennai, India	Maxillofacial Radiology
Jennifer Taylor	UK	Department of Oral Medicine, Glasgow Dental Hospital and School, Glasgow, UK	Oral Medicine
J Amadeo Valdéz	USA	MAHEC Dental Health Center, Asheville, NC, USA	Oral Medicine
Sook-Bin Woo	USA	Center for Oral Pathology, StrataDx, Lexington, MA, USA Harvard School of Dental Medicine, Boston, MA, USA	Oral Medicine Oral and Maxillofacial Pathology

Table 2. Survey questions for the interactive clicker sessions

Q1. In every future trial testing a treatment for OLP, how important is it to measure the APPEARANCE OF LESIONS (e.g., red, white, ulceration)?

Q2. In every future trial testing a treatment for OLP, how important is it to measure the SEVERITY OF LESIONS (e.g., extent and activity)?

Q3. In every future trial testing a treatment for OLP, how important is it to measure SYMPTOMS (e.g., pain, sensitivity, burning)?

Q4. In every future trial testing a treatment for OLP, how important is it to measure FUNCTION (e.g., eating, speaking, tooth brushing)?

Q5. In every future trial testing a treatment for OLP, how important is it to measure the SOCIAL IMPACT (e.g., interference with work family life)?

Q6. In every future trial testing a treatment for OLP, how important is it to measure the PSYCHOLOGICAL IMPACT (e.g., anxiety and depression)?

Q7. In every future trial testing a treatment for OLP, how important is it to measure PATIENT SUPPORT FROM FAMILY AND FRIENDS?

Q8. In every future trial testing a treatment for OLP, how important is it to measure PATIENT COMPLIANCE AND TOLERABILITY?

Q9. In every future trial testing a treatment for OLP, how important is it to measure the OVERALL PATIENT SATISFACTION?

Q10. In every future trial testing a treatment for OLP, how important is it to measure ADVERSE EVENTS (local and/or systemic)?

Q11. In every future trial testing a treatment for OLP, how important is it to measure ECONOMIC IMPACT (e.g., costs)?

Q12. In every future trial testing a treatment for OLP, how important is it to measure TIMELINES (e.g., time to response and duration of effect)?

Q13. In every future trial testing a treatment for OLP, how important is it to measure the NEED FOR RESCUE MEDICATION?

Q14. In every future trial testing a treatment for OLP, how important is it to measure BIOMARKERS POST-TREATMENT INITIATION (e.g., blood and saliva tests)?

Q15. In every future trial testing a treatment for OLP, how important is it to measure HISTOPATHOLOGY POST-TREATMENT (e.g., cell changes, cancer development)?

Table 3. Results of the World Workshop on Oral Medicine VIII clicker session

Questions	Limited importance n (%)	Unclear importance n (%)	Critical importance n (%)	Number of participants for each question	Consensus
Q1. In every future trial testing a treatment for OLP, how important is it to measure the APPEARANCE OF LESIONS (e.g., red, white, ulceration)?	3 (11.11)	4 (14.81)	20 (74)	27	Inclusion
Q2. In every future trial testing a treatment for OLP, how important is it to measure the SEVERITY OF LESIONS (e.g., extent and activity)?	0	2 (7.14)	26 (92.86)	28	Inclusion
Q3. In every future trial testing a treatment for OLP, how important is it to measure SYMPTOMS (e.g., pain, sensitivity, burning)?	0	0	27 (100)	27	Inclusion
Q4. In every future trial testing	1 (3.57)	0	27 (96.43)	28	Inclusion

a treatment for OLP, how important is it to measure FUNCTION (e.g., eating, speaking, tooth brushing)?					
Q5. In every future trial testing a treatment for OLP, how important is it to measure the SOCIAL IMPACT (e.g., interference with work, family life)?	0	9 (32.14)	19 (67.86)	28	Lack of agreement
Q6. In every future trial testing a treatment for OLP, how important is it to measure the PSYCHOLOGICAL IMPACT (e.g., anxiety and depression)?	0	5 (18.52)	22 (81.48)	27	Inclusion
Q7. In every future trial testing a treatment for OLP, how important is it to measure PATIENT SUPPORT FROM FAMILY AND FRIENDS?	14 (51.85)	9 (33.33)	4 (14.82)	27	Lack of agreement
Q8. In every future trial testing a treatment for OLP, how important is it to measure PATIENT COMPLIANCE AND TOLERABILITY?	0	2 (7.41)	25 (92.59)	27	Inclusion
Q9. In every future trial testing a treatment for OLP, how important is it to measure the OVERALL PATIENT SATISFACTION?	0	8 (29.63)	19 (70.37)	27	Inclusion
Q10. In every future trial testing a treatment for OLP, how important is it to measure ADVERSE EVENTS (local and/or systemic)?	0	0	27 (100)	27	Inclusion
Q11. In every future trial testing a treatment for OLP, how important is it to measure ECONOMIC IMPACT (e.g., costs)?	6 (20.69)	9 (31.03)	14 (48.28)	29	Lack of agreement
Q12. In every future trial testing a treatment for OLP, how important is it to measure TIMELINES (e.g., time to response and duration of effect)?	2 (7.41)	2 (7.41)	23 (85.18)	27	Inclusion
Q13. In every future trial testing a treatment for OLP, how important is it to measure the NEED FOR RESCUE MEDICATION?	4 (15.38)	4 (15.38)	18 (69.24)	26	Lack of agreement
Q14. In every future trial testing a treatment for OLP, how important is it to measure BIOMARKERS POST-TREATMENT INITIATION (e.g., blood and saliva tests)?	12 (48)	9 (36)	4 (16)	25	Lack of agreement

Q15. In every future trial testing a treatment for OLP, how important is it to measure HISTOPATHOLOGY POST-TREATMENT INITIATION (e.g., cell changes, cancer development)?	18 (72)	6 (24)	1 (4)	25	No inclusion

Table 4. Results of the 2022 American Academy of Oral Medicine Annual Conference clicker session

Questions	Limited importance n (%)	Unclear importance n (%)	Critical importance n (%)	Number of participants for each question	Consensus
Q1. In every future trial testing a treatment for OLP, how important is it to measure the APPEARANCE OF LESIONS (e.g., red, white, ulceration)?	1 (1.075)	7 (7.53)	85 (91.40)	93	Inclusion
Q2. In every future trial testing a treatment for OLP, how important is it to measure the SEVERITY OF LESIONS (e.g., extent and activity)?	0	1 (1.1)	90 (98.9)	91	Inclusion
Q3. In every future trial testing a treatment for OLP, how important is it to measure SYMPTOMS (e.g., pain, sensitivity, burning)?	0	2 (2.11)	93 (97.89)	95	Inclusion

Q4. In every future trial testing a treatment for OLP, how important is it to measure FUNCTION (e.g., eating, speaking, tooth brushing)?	0	9 (9.37)	87 (90.63)	96	Inclusion
Q5. In every future trial testing a treatment for OLP, how important is it to measure the SOCIAL IMPACT (e.g., interference with work, family life)?	8 (8.33)	22 (22.92)	66 (68.75)	96	Lack of agreement
Q6. In every future trial testing a treatment for OLP, how important is it to measure the PSYCHOLOGICAL IMPACT (e.g., anxiety and depression)?	7 (7.37)	15 (15.79)	73 (76.84)	95	Inclusion
Q7. In every future trial testing a treatment for OLP, how important is it to measure PATIENT SUPPORT FROM FAMILY AND FRIENDS?	27 (29.67)	40 (43.96)	24 (26.37)	91	Lack of agreement
Q8. In every future trial testing a treatment for OLP, how important is it to measure PATIENT COMPLIANCE AND TOLERABILITY?	1 (1.05)	6 (6.32)	88 (92.63)	95	Inclusion
Q9. In every future trial testing a treatment for OLP, how important is it to measure the OVERALL PATIENT SATISFACTION?	2 (2.11)	13 (13.68)	80 (84.21)	95	Inclusion
Q10. In every future trial testing a treatment for OLP, how important is it to measure ADVERSE EVENTS (local and/or systemic)?	0	3 (3.16)	92 (96.84)	95	Inclusion
Q11. In every future trial testing a treatment for OLP, how important is it to measure ECONOMIC IMPACT (e.g., costs)?	16 (16.85)	36 (37.89)	43 (45.26)	95	Lack of agreement
Q12. In every future trial testing a treatment for OLP, how important is it to measure TIMELINES (e.g., time to response and duration of effect)?	2 (2.08)	3 (3.13)	91 (94.79)	96	Inclusion
Q13. In every future trial testing a treatment for OLP, how important is it to measure the NEED FOR RESCUE MEDICATION?	8 (8.42)	19 (20)	68 (71.58)	95	Inclusion
Q14. In every future trial testing a treatment for OLP, how important is it to measure BIOMARKERS POST-	33 (34.37)	27 (28.13)	36 (37.5)	96	Lack of agreement

TREATMENT INITIATION (e.g., blood and saliva tests)?					
Q15. In every future trial testing a treatment for OLP, how important is it to measure HISTOPATHOLOGY POST-TREATMENT INITIATION (e.g., cell changes, cancer development)?	30 (31.58)	22 (23.16)	43 (45.26)	95	Lack of agreement

Table 5. Results of the patient focus group voting

Questions	Limited importance n (%)	Unclear importance n (%)	Critical importance n (%)	Number of participants for each question	Consensus
Q1. In every future trial testing a treatment for OLP, how important is it to measure the APPEARANCE OF LESIONS (e.g., red, white, ulceration)?	0	2 (20)	8 (80)	10	Inclusion
Q2. In every future trial testing a treatment for OLP, how important is it to measure the SEVERITY OF LESIONS (e.g., extent and activity)?	0	2 (20)	90 (80)	10	Inclusion
Q3. In every future trial testing a treatment for OLP, how important is it to measure SYMPTOMS (e.g., pain, sensitivity, burning)?	0	0	10 (100)	10	Inclusion
Q4. In every future trial testing a treatment for OLP, how important is it to measure FUNCTION (e.g., eating, speaking, tooth brushing)?	0	2 (20)	8 (80)	10	Inclusion
Q5. In every future trial testing a treatment for OLP, how important is it to measure the SOCIAL IMPACT (e.g., interference with work, family life)?	0	2 (20)	8 (80)	10	Inclusion
Q6. In every future trial testing	0	3 (30)	7 (70)	10	Inclusion

a treatment for OLP, how important is it to measure the PSYCHOLOGICAL IMPACT (e.g., anxiety and depression)?					
Q7. In every future trial testing a treatment for OLP, how important is it to measure PATIENT SUPPORT FROM FAMILY AND FRIENDS?	4 (40)	2 (20)	4 (40)	10	Lack of agreement
Q8. In every future trial testing a treatment for OLP, how important is it to measure PATIENT COMPLIANCE AND TOLERABILITY?	0	2 (20)	8 (80)	10	Inclusion
Q9. In every future trial testing a treatment for OLP, how important is it to measure the OVERALL PATIENT SATISFACTION?	0	0	10 (100)	10	Inclusion
Q10. In every future trial testing a treatment for OLP, how important is it to measure ADVERSE EVENTS (local and/or systemic)?	2 (20)	4 (40)	4 (40)	10	Lack of agreement
Q11. In every future trial testing a treatment for OLP, how important is it to measure ECONOMIC IMPACT (e.g., costs)?	0	6 (60)	4 (40)	10	Lack of agreement
Q12. In every future trial testing a treatment for OLP, how important is it to measure TIMELINES (e.g., time to response and duration of effect)?	0	2 (20)	8 (80)	10	Inclusion
Q13. In every future trial testing a treatment for OLP, how important is it to measure the NEED FOR RESCUE MEDICATION?	1 (10)	4 (40)	5 (50)	10	Lack of agreement
Q14. In every future trial testing a treatment for OLP, how important is it to measure BIOMARKERS POST-TREATMENT INITIATION (e.g., blood and saliva tests)?	6 (60)	4 (40)	0	10	Lack of agreement
Q15. In every future trial testing a treatment for OLP, how important is it to measure HISTOPATHOLOGY POST-TREATMENT INITIATION (e.g., cell changes, cancer development)?	5 (50)	5 (50)	0	10	Lack of agreement

Table 6. Consensus: Average between patients' and clinicians' voting results

Questions	Limited importance (%)	Unclear importance (%)	Critical importance (%)	Consensus
Q1. In every future trial testing a treatment for OLP, how important is it to measure the APPEARANCE OF LESIONS (e.g., red, white, ulceration)?	0.54	13.77	85.70	Inclusion
Q2. In every future trial testing a treatment for OLP, how important is it to measure the SEVERITY OF LESIONS (e.g., extent and activity)?	0	10.55	89.45	Inclusion
Q3. In every future trial testing a treatment for OLP, how important is it to measure SYMPTOMS (e.g., pain, sensitivity, burning)?	0	1.06	98.95	Inclusion
Q4. In every future trial testing a treatment for OLP, how important is it to measure FUNCTION (e.g., eating, speaking, tooth brushing)?	0	14.69	85.32	Inclusion
Q5. In every future trial testing a treatment for OLP, how important is it to measure the SOCIAL IMPACT (e.g., interference with work, family life)?	4.17	21.46	74.38	Inclusion
Q6. In every future trial testing a treatment for OLP, how important is it to measure the PSYCHOLOGICAL IMPACT (e.g., anxiety and depression)?	3.69	22.90	73.42	Inclusion
Q7. In every future trial testing a treatment for OLP, how important is it to measure PATIENT SUPPORT FROM FAMILY AND FRIENDS?	34.84	31.98	33.19	Lack of agreement
Q8. In every future trial testing a treatment for OLP, how important is it to measure PATIENT COMPLIANCE AND TOLERABILITY?	0.53	13.16	86.32	Inclusion
Q9. In every future trial testing a treatment for OLP, how important is it to measure the OVERALL PATIENT SATISFACTION?	1.06	6.84	92.11	Inclusion
Q10. In every future trial testing a treatment for OLP, how important is it to measure ADVERSE EVENTS (local and/or systemic)?	10	21.58	68.42	Lack of agreement
Q11. In every future trial testing a treatment for OLP, how important is it to measure	8.43	48.95	42.63	Lack of agreement

ECONOMIC IMPACT (e.g., costs)?				
Q12. In every future trial testing a treatment for OLP, how important is it to measure TIMELINES (e.g., time to response and duration of effect)?	1.04	11.57	87.40	Inclusion
Q13. In every future trial testing a treatment for OLP, how important is it to measure the NEED FOR RESCUE MEDICATION?	9.21	30.00	60.79	Lack of agreement
Q14. In every future trial testing a treatment for OLP, how important is it to measure BIOMARKERS POST-TREATMENT INITIATION (e.g., blood and saliva tests)?	47.19	34.07	18.75	Lack of agreement
Q15. In every future trial testing a treatment for OLP, how important is it to measure HISTOPATHOLOGY POST-TREATMENT INITIATION (e.g., cell changes, cancer development)?	40.79	36.58	22.63	Lack of agreement

STATEMENT OF CLINICAL RELEVANCE

The use of a core outcome set (COS) for oral lichen planus (OLP) would reduce heterogeneity of outcomes measured in clinical trials and improve evidence-based interventions. This consensus process is the final part of a three-stage OLP COS development project.