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Development of The Lupus Clinical Trials Enrollment Decision Aid: a pilot study

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Introduction: In this pilot study, we describe the development of a patient-centered Decision Aid (DA) for participation of SLE clinical trials called "The Lupus Clinical Trials Enrollment DA".
Methods: A draft DA was designed by a development working group using a collaborative, iterative process using the International Patient Decision Aid Standards (IPDAS) guidelines. The approved draft DA was then pilot tested and refined using semi structured interview with 10 lupus providers and 12 SLE patients. Descriptive statistics were calculated. Interviews/surveys were conducted until thematic saturation was achieved. Responses on usefulness were accumulated, and mean usefulness scores were calculated. Feedback from the semi-structured interviews were categorized into several themes as outlined in the results section.
Results: The definition of treatments, side effects of each option, and expected improvement from each option was outlined. 90% of providers and 91.7% of patients reported that the definition of SOC treatment was clear. Additionally, the expected improvement for SOC (90% of providers, 100% of patients), clinical trial drug (70%, 91.6%), and placebo (70%, 100%) were noted to be clear. Side effects of SOC (80%, 100%), clinical trial drug treatment (80%, 100%), placebo (90%, 100%), were also noted to be clear. 100% of providers and patients thought that the figure outlining pros/cons of participating in clinical trials was appropriate. The mean usefulness scores for the DA were 4.45/5 for providers and 4.67/5 for patients.
Discussion: These data demonstrate that both patients and providers confirm that the newly developed The Lupus Clinical Trials Enrollment DA is useful and easy to use. Qualitative feedback from providers demonstrated concern that aspects of the DA, such as expected improvement and side effects might be unclear to patients; however, patients did not express the same concern in either the quantitative or qualitative feedback.

KEYWORDS

SLE, decision aid, clinical trial participation, decision aid development, lupus clinical trial participation

Introduction

Systemic Lupus Erythematosus (SLE) is a chronic, high impact autoimmune condition characterized by heterogeneity and an unpredictable course. SLE poses significant challenges including inaccurate or delayed diagnosis, years of exposure to toxic, only partially effective medications, and major impact on quality of life, family, relationships,

and careers. Data from observational studies and clinical trials indicate that therapeutic responses to new and existing medications in SLE are in the 50% range, highlighting the major unmet need for more effective treatments for lupus. Studies have shown that the majority of patients are dissatisfied with treatment options for SLE, and report that lupus takes a toll on their professional responsibilities, social lives, and mental health (1–4). Lupus patients with chronic and moderate to severe disease often develop organ damage and premature mortality (5, 6). The recent approval of voclosporin for lupus nephritis (7), and anifrolumab for non-renal lupus (8) have increased the interest in drug development in lupus. While several SLE phase III clinical trials have failed to meet their primary endpoints there are multiple ongoing phase III trials competing for patients (9–14). Data from a recent review propose that the barriers to new treatments in SLE include patient factors, provider factors, and system factors (15). Improving patient-provider communication and shared decision making is likely to result in increased participation in clinical trials (16, 17).

Across a wide variety of medical decisions, decision aids (DAs) allow patients to be more knowledgeable, better informed, clearer about risks and their values, have a more active role in decision making, and decrease decisional conflict (18). DAs have been developed for use in SLE clinical care. A DA for patients with lupus nephritis was found to be more effective than usual care in reducing decisional conflict in choosing the immunosuppressive regimen best aligned with patient values (19, 20). A recently developed DA to facilitate HCQ adherence by engaging patients in therapeutic decision-making (HCQ-SAFE) improved knowledge about the safety and efficacy of HCQ and engaged patients in treatment decisions (21).

To our knowledge, there are no DAs to help patients choose whether to participate in SLE clinical trials. Here, we describe the development of a patient-centered DA for participation of SLE clinical trials called "The Lupus Clinical Trials Enrollment DA". This DA was developed as part of the New York City Lupus Outreach and Clinical Trial Education Program, which aims to increase participation of racial and ethnic minority patients in SLE clinical trials by addressing the patient-side barriers to clinical trials through a patient engagement program. This DA was created with the goal of decreasing decisional conflict in participating in SLE clinical trials and as a tool for shared decision making between providers and patients.

TABLE 1 Demographics of patients.

Race	$N = 12$
Black	33%
White	41.7%
Asian	8.3%
Native American	0%
Other	16.7%
Hispanic	33%
Non-hispanic	66.7%
Mean age	42.17
Mean duration of disease (Y)	13.08 ± 6.73
Mean years of education	16.54 ± 1.92
Mean SLEDAI-2K score	6.33 (range: 2–16)
Mean SLICC damage index score	1.75 (range: 0–4)
Employed (%)	50
Mean household income by zip code ($)	98,208 ± 54,396
Prior clinical trial participation (%)	58.3

Materials and methods

DA development

The draft DA was designed using a collaborative, iterative process and was informed by previous decision aids as well as published studies on barriers for participating in lupus clinical trials (17, 20, 22, 23). The development working group included 3 lupus clinical trialists, a methodologist with experience in creating decision aids at an academic medical center (Columbia University Medical Center) in the United States, and 2 SLE patients with prior involvement in clinical trials. The working group provided feedback on content, language, and design. The DA was developed based on the International Patient Decision Aid Standards (IPDAS) guidelines (24, 25). The working group met in person over three small focus groups to create and refine the draft DA.

Pilot testing

The draft DA approved by the working group was evaluated and refined using semi-structured focused interviews with 10 lupus providers and 12 SLE patients and a working version of the DA was created. We recruited a racially and socioeconomically diverse group of patients, all who met the 2019 ACR/EULAR classification of SLE. Providers were all lupus clinicians experienced in SLE clinical care and clinical trials. Both patients and providers were asked if the components of the DA, including definitions of treatments expected improvement, and side effects, were clear (yes, no, unsure) and helpful (on a scale of 0–5). Additional clarifications were elicited if any items were answered as "no" or "unsure". Descriptive statistics were calculated. Interviews/surveys were conducted until thematic saturation was achieved. Responses on usefulness were accumulated, and mean usefulness scores were calculated. Feedback from the semi-structured interviews were categorized into several themes as outlined in the results section.

Results

The 10 providers (9 physicians and one advanced practice provider) that participated in the focus group were well versed in the care of patients with lupus and had a mean of 8.1 years of practice. The mean disease duration for patients living with SLE was 13.1 years. Demographics for the patients are described in Table 1.

The Lupus Clinical Trials Enrollment DA was developed as a 1-page paper, DA that addresses the decision to participate in an

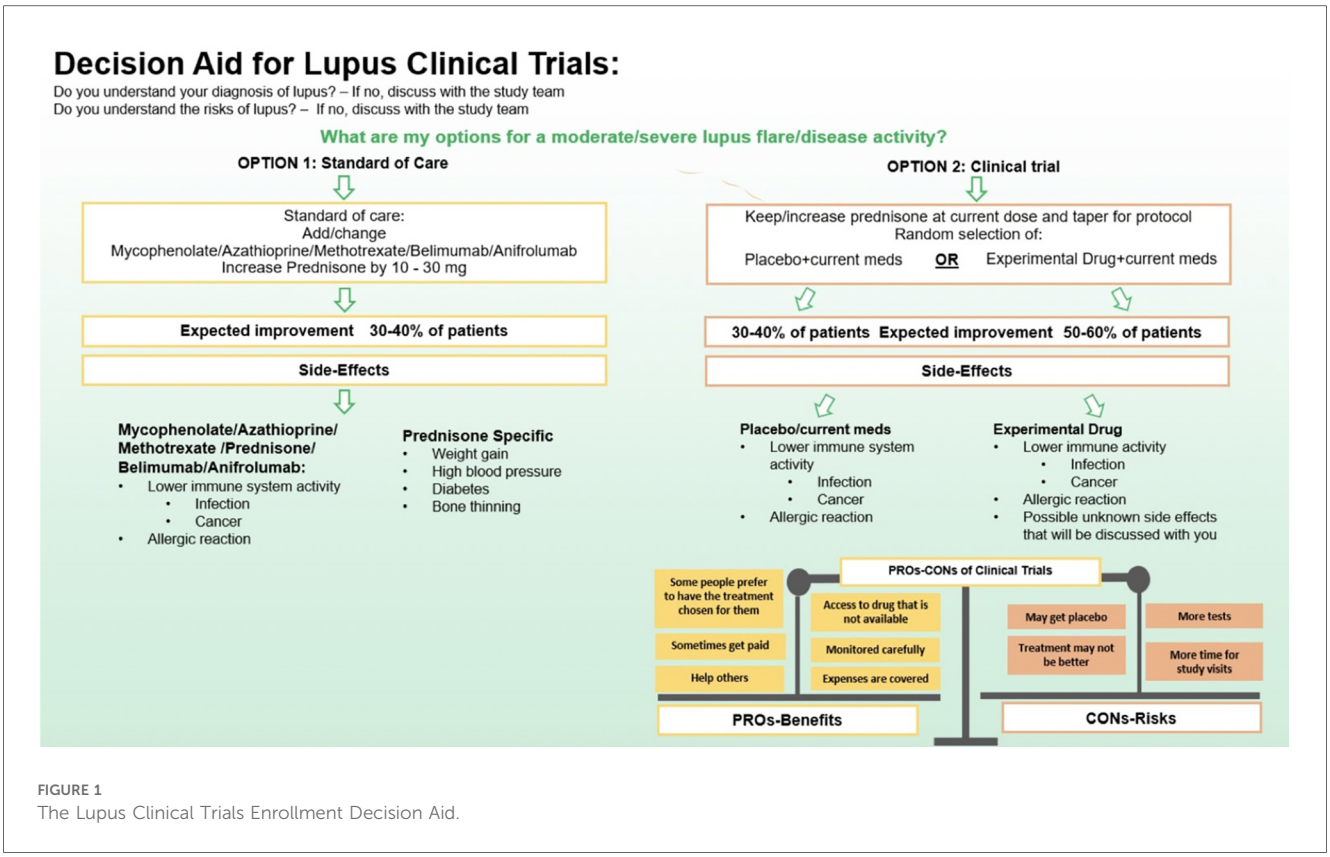

FIGURE 1
The Lupus Clinical Trials Enrollment Decision Aid.

SLE clinical trial. Two options are reviewed: (1) Continue/change Standard of Care SLE Regimen (SOC), vs. (2) Participating in a clinical trial. The definition of these treatments, side effects of each option, and expected improvement from each option was outlined (Figure 1).

TABLE 2 Provider feedback clarity.

Was the DA clear about _____?	Yes	Unsure	No
Definition of SOC	9	1	0
SOC improvement	9	1	0
CT improvement	7	3	0
Placebo improvement	7	3	0
SOC side effects	8	2	0
CT side effects	8	2	0
Placebo side effects	9	1	0
Figure of pro/cons of clinical trials	10	0	0

SOC, standard of care, CT, clinical trial.

TABLE 3 Patient feedback clarity.

Was the DA clear about _____?	Yes	Unsure	No
Definition of SOC	11	1	0
SOC improvement	12	0	0
CT improvement	11	1	0
Placebo improvement	12	0	0
SOC side effects	12	0	0
CT side effects	12	0	0
Placebo side effects	12	0	0
Figure of pro/cons of clinical trials	12	0	0

SOC, standard of care; CT, clinical trial.

Findings of the semi structured interviews are summarized in Tables 2, 3: 90% of providers and 91.7% of patients reported that the definition of SOC treatment was clear. Additionally, the expected improvement for SOC (90% of providers, 100% of patients), clinical trial drug (70%, 91.6%), and placebo (70%, 100%) were noted to be were clear. Side effects of SOC (80%, 100%), clinical trial drug treatment (80%, 100%), placebo (90%, 100%), were also noted to be clear. 100% of providers and patients thought that the figure outlining pros/cons of participating in clinical trials was appropriate.

The mean usefulness scores for the DA were 4.45/5 for providers and 4.67/5 for patients. Analysis of the qualitative data revealed that both patients ($n = 9$) and providers($n = 9$) believed that the DA clearly summarized the information and was easy to use. Three providers expressed concern not including enough patient friendly language and three providers expressed that more information about the definition of SOC and side effects was needed. Four providers voiced that more information was needed for expected improvement. Furthermore, two patients stated that more information was needed about side effects and standard of care, and one patient learned new information (Table 4).

Discussion

These data demonstrate that both patients and providers confirm that the newly developed Lupus Clinical Trials Enrollment DA is useful and easy to use. Qualitative feedback from providers demonstrated concern that aspects of the DA,

TABLE 4 Qualitative feedback From providers and patients.

Theme	*N*	Demonstrative quote
Provider feedback		
DA clearly summarizes options and is easy to use	9	"[The DA is] clear and concise, empowers patient to be clear about options they have."
Concerns about not enough patient friendly language	3	"I think placebo may need to be defined for some patients."
Concerns about adding more information about definition of SOC and side effects	3	"I would want to know an example of possible unknown side effects."
Add more information about expected improvement	4	"A percentage amount is clear, however what does this translate to clinically for the patient?"
Patient feedback		
DA clearly summarizes options and is easy to use	9	"Seeing 30%–40% and 50%–60% is helpful, side effects are helpful, can see not so much of a risk."
Needs more information about side effects and standard of care	2	"Add hydroxychloroquine [to the DA] if appropriate."
Learned new information about SLE treatment/clinical trials	1	"I learned things I did not know before."

such as expected improvement and side effects might be unclear to patients; however, patients did not express the same concern in either the quantitative or qualitative feedback. Furthermore, patients expressed positive qualitative feedback towards the DA, with multiple positive comments, particularly about the clarity of SOC vs. clinical trial participation. Given the confidence expressed in both clarity and usefulness of the DA by patients no additional changes were made to the DA.

To our knowledge this is the first patient DA for participation in SLE clinical trials. The new 2023 EULAR recommendations for the management of SLE note, "SLE requires multidisciplinary, individualised management with patient education and shared decision-making, taking into consideration the costs to patient and society," (26). This DA and others could play an important role in helping patients approach clinical trial and other treatment decisions for management of SLE. The Lupus Clinical Trials Enrollment DA can be easily adapted to specific clinical trials and can improve shared decision-making by providing critical information for patients and facilitate patient-provider conversations (27).While the initial patient and provider data is positive, our preliminary data is accumulated from a small sample of patients and providers. Our DA is continuing to be used as part of the ongoing NYC Lupus Outreach and Clinical Trial Education Program, a patient engagement program sponsored by the U.S. Department of Health and Human Services, with the goal of increasing enrollment of racial and ethnic minority patients in clinical trials. This program is currently ongoing, with currently more than 150 patients enrolled from a diverse socioeconomic background across NYC clinics. Throughout this project, the DA will be used in conjunction with a low literacy decisional conflict scale as the primary outcome which will provide much needed data on the use of this DA in a clinic setting in patient recruitment (28).

A qualitative study that evaluated the perceptions of diverse patients ins SLE clinical trial participation found that altruism and personal benefits were viewed as advantages of trial participation, while uncertainties, disappointment, information burden and life-health balance are viewed as disadvantages (23). Other barriers of minority enrollment in SLE Clinical Trials include lack of trust in the research establishments, lack of familiarity with and knowledge about clinical trials, being overwhelmed about SLE, and not being asked to participate (29). The Lupus Clinical Trials Enrollment DA aims to reduce some of these barriers by diminishing decisional conflict, increasing knowledge about the risk of clinical trial participation, and providing a tool for patient-provider conversations about SLE clinical trials.

While the DA was designed for our clinical trial education program, it could be customized for specific clinical trial recruitment (i.e., risks of adverse effects could be modified to reflect that of a particular clinical trial drug). This would make the DA easy to incorporate in the shared decision-making process for patient clinical trial participation. More data in needed to understand if incorporating the DA in a clinical trial recruitment decreased decisional conflict and increases clinical trial participation.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Columbia Human Research Protection Office Institutional Review Board. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

LK: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. RK: Conceptualization, Formal Analysis, Methodology, Writing – original draft, Writing – review & editing. JW: Data curation, Project administration, Writing – original draft, Writing – review & editing. SI: Data curation, Project administration, Writing – original draft, Writing – review & editing. WT: Conceptualization, Writing – original draft, Writing – review & editing, Data curation. LG-P: Conceptualization, Writing – original draft, Writing – review & editing. NS: Conceptualization, Writing – original draft, Writing – review & editing. YG: Conceptualization, Writing – original draft, Writing – review & editing. KA: Conceptualization,

Writing – original draft, Writing – review & editing. AA: Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Supervision.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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