occurred in 115 subjects; 67 of which were felt to be probably or possibly related to the intervention.

Conclusions Recruitment for a trial of pre-clinical or incomplete lupus is difficult. Barriers included perceived risk of medication for an asymptomatic condition, or desire to take medication, even if not known to work. Nevertheless, a significant number of subjects has transitioned to lupus during the course of the trial. Data comparing HCQ to placebo will be available in 2023.

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Trial Registration ClinicalTrials.gov NCT03030118.

1105 TELEMEDICINE IN RHEUMATOLOGY: A SURVEY OF PATIENT AND PROVIDER SATISFACTION WITH VIRTUAL CARE

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Abstract 1105 Table 1 Telemedicine Seven-item Questionnaire

Questionnaire Item	Response	N (%)
How satisfied were you with your previous telemedicine visit?	Highly satisfied	50 (50%)
	Satisfied	34 (34%)
	Neither satisfied nor unsatisfied	11 (11%)
	Not satisfied	5 (5%)
	Highly unsatisfied	0 (0%)
Reasons for satisfaction?	Avoid coming into the office	73 (73%)
	Call went smoothly	77 (77%)
	Decrease their concerns over condition, medications and risk of COVID-19	75 (75%)
Reasons for unsatisfaction?	Technical difficulties	4 (4%)
	Visit was too short	2 (2%)
	Visit was too basic for their needs	4 (4%)
How comfortable were you with your previous telemedicine visits?	Very comfortable	62 (62%)
	Comfortable	24 (24%)
	Neither comfortable nor uncomfortable	11 (11%)
	Uncomfortable	3 (3%)
	Highly uncomfortable	0 (0%)
The physician was able to address what was bothering me through the telemedicine visit?	Strongly agree	54 (54%)
	Agree	37 (37%)
	Don't know	5 (5%)
	Disagree	4 (4%)
	Strongly disagree	0 (0%)
Overall, compared to an in-person visit, the telemedicine visit was?	Much better	10 (10%)
	Better	6 (6%)
	Same	57 (57%)
	Worse	25 (25%)
	Much worse	2 (2%)
I would have a telemedicine appointment in the future, if given the option.	Yes	77 (77%)
	Unsure	14 (14%)
	No	9 (9%)

Background During the COVID-19 pandemic, in-person rheumatology was largely replaced by telemedicine to ensure the safety of both patients and providers. The increased pressure on the healthcare system amidst the pandemic that created a soaring number of patients has pressed an effective supplementary healthcare format for both rheumatology and other specialties. However, it remains unclear whether telemedicine, in the commonly used video-conference format, can serve as a feasible alternative to conventional in-person clinical visits while achieving comparable patient/provider satisfaction and maintaining long-term quality of care. The objective of this study was to evaluate the patient and provider experience with video-conference based virtual care thus provide further information on the prospective use of telemedicine in rheumatology practice.

Methods April-June 2020 we disseminated a seven-item questionnaire to patients with rheumatic diseases who recently attended telemedicine encounters in a video-conference format to evaluate their satisfaction and experience with the encounter. Simultaneously, we surveyed providers who recently conducted virtual care with a similar seven-item questionnaire to evaluate provider attitude towards the virtual care.

Results A total of 100 patients and 17 care providers responded to the survey. Of the 100 patients surveyed, 84 (84%) reported high levels of satisfaction; 86 (86%) felt comfortable with the video-conference format and 77 (77%) expressed willingness to use telemedicine in the future; 92 (92%) acknowledged that physicians were able to satisfactorily address the issues and concerns that prompted the visit, and 57 (57%) considered the experiences very similar to the in-person clinical visits. However, of the 17 care providers surveyed, only 3 (18%) expressed satisfaction with telemedicine while 14 (82%) considered telemedicine visit worse than conventional in-person clinical visits.

Abstract 1105 Table 2 Demographic characteristics of study subjects

Characteristics	Categories	N (%)
Gender	Male	9 (9%)
	Female	91 (91%)
Age (years)	20-30	18 (18%)
	30-40	22 (22%)
	40-50	22 (22%)
	50-60	21 (21%)
	60-70	13 (13%)
	70-80	4 (4%)
Race	White	41 (41%)
	Black or African American	25 (25%)
	Asian	7 (7%)
	Hispanic	26 (26%)
Health insurance	Insured	100 (100%)
	Uninsured	0 (0%)
Diagnoses	Systemic Lupus Erythematosus (SLE)	60 (60%)
	Rheumatoid Arthritis (RA)	7 (7%)
	Undifferentiated Connective Tissue Diseases (UCTD)	7 (7%)
	Psoriatic Arthritis (PsA)	5 (5%)
	Sjogren's Syndrome (SS)	4 (4%)
	Spondylitis	3 (3%)
	Other (Sarcoidosis, Myositis, Osteoarthritis, Fibromyalgia, Uveitis, Vasculitis)	14 (14%)

Conclusions Our cohort showed high rate of patient satisfaction with telemedicine healthcare. However, the relatively low healthcare provider satisfaction rate raises concern as to whether telemedicine constitutes a satisfactory alternative to conventional in-person care. Additional researches are required to investigate the feasibility of telemedicine in long-term disease activity evaluation and patient outcome measurement.

1106

PREDICTING ADVERSE PREGNANCY OUTCOMES IN WOMEN WITH SYSTEMIC LUPUS ERYTHEMATOSUS: A COMPARISON OF MACHINE LEARNING METHODS

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Background Nearly 20% of pregnancies in patients with Systemic lupus erythematosus (SLE) result in an adverse pregnancy outcome (APO); early identification of women with SLE who are at high risk of APO is vital. We previously derived a risk model for APO using logistic regression and data from the PROMISSE Study, a large multi-center, multi-ethnic/racial study of APO in women with mild/moderate SLE and/or aPL. While this highly interpretable regression model showed promising predictive performance, we sought to determine if novel and increasingly popular machine learning (ML) approaches would enhance APO risk prediction using all available predictors and potential complex relationships such as interactions or higher order terms. We compared logistic regression modeling to LASSO, a regression approach that handles high-dimensionality and correlated predictors through shrinkage of estimated coefficients, as well as several 'black box' ML algorithms. ML techniques are well-suited to high-dimensional data, require no variable selection, and unlike regression-based approaches are able to explore complex relationships without explicit input by the user.

Methods We used the original PROMISSE data (41 predictor variables from 385 subjects) with APO (71/385, 18.4%) defined as preterm delivery due to placental insufficiency or preeclampsia, fetal or neonatal death, or fetal growth restriction. Logistic regression with stepwise selection (LR-S) was compared to LASSO, random forest (RF), neural network (NN) with 2 hidden neurons, support vector machines with RBF kernel (SVM_{RBF}), and gradient boosting (GB). To summarize discrimination we present the area under the receiver operating curve (AUC), along with sensitivity (Sn) and specificity (Sp) at an optimal cut-point.

Results Regression based classifiers confirmed the predictors of APO identified in our previously reported model: non-white race, use of anti-hypertensive medication, low platelets, SLE disease activity, lupus anticoagulant (LAC) +, and high diastolic blood pressure (DBP). RF additionally revealed two novel interaction variables that increased APO risk: LAC+ with anti-β2GPI IgM, high DBP with low C3. LR-S and LASSO were observed to have similar overall discrimination (AUC=0.75 vs. 0.77, table 1) but LASSO had higher sensitivity (Sn=0.71 vs. 0.65). ML classifiers RF and SVM_{RBF} had similar good performance (AUC=0.77-0.78), while NN and GB were inferior.

Conclusions Several popular ML algorithms did not provide meaningful improvements in the prediction of APO. The strong relative performance of regression-based models with

Abstract 1106 Table 1 Summary of 5x10 fold cross-validation results

Model	AUC	Sensitivity	Specificity
LR-S	0.75	0.65	0.78
LASSO	0.77	0.71	0.75
NN	0.71	0.70	0.61
RF	0.77	0.77	0.78
GB	0.72	0.72	0.72
SVM-RBF	0.78	0.78	0.73

this large and well-characterized clinical data set is notable as these models are highly interpretable, well-understood, and generally require fewer variables to generate a risk prediction. It is unlikely that complex ML algorithms with existing variables will yield superior APO predictions; new clinical and laboratory markers may improve predictions in the future.

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1107

ECONOMIC EVALUATION OF HYDROXYCHLOROQUINE USE IN AN INTERNATIONAL INCEPTION COHORT

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