Background: Adults with rheumatic diseases are a COVID-19 vulnerable population with potential increased risk for severe infection. COVID-19 vaccines are a key strategy to ending the pandemic. Unfortunately, fears about vaccines, some of which are propagated by misinformation, are common and may prevent or inappropriately delay vaccination. *Refusal or uncertainty to get a vaccine despite its availability* is known as vaccine hesitancy.

Objectives: This study aims at defining causes of COVID-19 vaccine hesitancy among rheumatology patients.

Methods: Between November and December 2020, a cross-sectional survey was completed by rheumatology patients presenting to a large Canadian tertiary-care center for influenza immunization. COVID-19 risk factors, previous COVID-19 infection, the likelihood of getting a future COVID-19 vaccine (scale 0-10), and contextual, individual, and vaccine-specific potential determinants of vaccine hesitancy were assessed. Patients were classified into 5 groups based on how likely they were to get a future COVID-19 vaccine (0= not likely at all; 2.5= unlikely; 5= intermediate; 7.5= likely; 10= highly likely). A machine learning approach (XgBoost) was used to fit univariate models for a multi-class correlation.

Results: 157 rheumatology patients completed the survey. Most were females (n=112, 71%) with a mean age of 54.6 (standard deviation 17.9). The majority (73%) had tertiary-education, and 46% were employed at the time of the survey. The most common rheumatology diagnoses were rheumatoid arthritis (n=90, 58%), systemic lupus erythematosus/vasculitis (n=41, 26%) and spondyloarthropathies (n=39, 25%). Most patients were on immunosuppressors (n=93, 59%). Only half (n=85, 54%) were highly likely to accept a future COVID vaccine, 17% (n=26) likely, 19% (n=30) intermediate, 6% (n=10) unlikely, and 4% (n=6) not likely at all. One hundred thirty-five patients (86%) previously received the flu vaccine, whereas 6% (n=10) previously rejected it. Only three patients were previously diagnosed with COVID-19 (2%) one of whom was hospitalized. Eighty-seven patients (56%) considered that the COVID-19 vaccine should be mandatory, and 101 (65%) that they should receive it. Most respondents were somewhat concerned about receiving a future COVID-19 vaccine (n=116, 76%) despite that 65% believed that vaccines benefits outweighed their risks. Almost all, (n=145, 96%) believed that governmental decisions about vaccines are in the best interest of the population, while less than half (n=70, 45%) were confident that pharmaceutical companies would provide safe and effective vaccines. One hundred participants (65%) denied feeling social pressure to get the vaccine, and 55% (n=81) were willing to pay for the vaccine. Feeling social pressure about getting a COVID-19 vaccine, having severe concerns about receiving a future COVID-19 vaccine, distrust in pharmaceutical companies, lower education, and doubts of whether vaccines benefits outweigh their risks, were negatively associated with COVID vaccine acceptance.

Conclusion: Forty six percent of rheumatology patients being immunized against influenza showed at least some hesitancy towards COVID-19 vaccination. Multiple contextual, individual, and vaccine-related factors may contribute. Targeted educational strategies, including producing and communicating data on vaccine safety, may help promote vaccine uptake in this potentially vulnerable population.

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Spine, mechanical musculoskeletal problems, local soft tissue disorders

POS1269

THE UTILITY OF ULTRASOUND TO PREDICT PATIENT OUTCOMES IN SHOULDER PAIN: A PROSPECTIVE OBSERVATIONAL STUDY OF 500 PATIENTS

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Background: Shoulder pain is common and persistent, with a large socio-economic burden. Ultrasound (US) scans are used for diagnosing and managing shoulder pain, but the extent to which it informs management and improves outcomes is unknown. A recent retrospective study identified groups with different patterns of US pathologies.

Objectives: To confirm the existence of US-based groups of shoulder pain and determine if US-detected pathology (grouped or individual) predicts outcomes in the context of usual care. Response to local steroid injection was also evaluated.

Methods: This was a 6 month, prospective, single centred, community based, observational cohort study. Inclusion: shoulder pain, ≥18 years, first shoulder US. Exclusion: shoulder surgery, inflammatory arthritis, steroid/physiotherapy in prior 6 weeks. Standardised reporting for 10 US pathologies was employed. Latent

class analysis (LCA) identified pathology-based groups. Multiple linear regression analysis explored associations between baseline pathologies, subsequent treatment and 6-month Shoulder Pain and Disability Index (SPADI). Growth mixture modelling (GMM) identified groups with common trajectories of change.

Results: Of 500 patients (mean age 53.6; 52% female), 330 completed follow-up. LCA identified 4 groups: bursitis without acromioclavicular joint degeneration (ACJD) (group 1), bursitis with ACJD (group 2), rotator cuff tear (group 3), no bursitis/tear (group 4). SPADI was higher at baseline for tears (55.1 vs. 49.7-51.3) (overall p=0.005), but groups did not differ at 6 months (p=0.379) (Table 1). No individual pathologies predicted 6-month outcomes. Response to baseline injection at week 2 did not differ between groups (p=0.423). GMM found 4 trajectories; the majority of patients followed trajectory 1 (little change), irrespective of US pathology group (79%, 77%, 87%, 70% of US groups 1-4 respectively) (Figure 1).

Conclusion: This is the largest prospective study involving US of symptomatic shoulders, and the first to investigate groups with distinct patterns of US pathologies in predicting outcome. US-based classification of pathology (as groups or individually) did not predict 6-month outcomes with current treatments and there were no differences in short-term response to steroids between groups. The role of routine diagnostic US for shoulder pain needs consideration; it may be useful if evidence-based therapies for specific pathologies are established.

Table 1. Predictors of SPADI score at 6 months

Baseline characteristic	Coefficient* (95% CI), p-value
Pathology group:Bursitis w/o ACJ degeneration (group 1)	Reference
Bursitis with ACJ degeneration (group 2)	0.08 (-5.15, 5.32), p=0.975
RC tear (group 3)	5.01 (-1.48, 11.50), p=0.130
No bursitis, no RC tear (group 4)	1.98 (-4.00, 7.96), p=0.516
Injection at scan	4.87 (0.40, 9.34), p=0.033
Age, years	-0.01 (-0.17, 0.15), p=0.898
Female	-1.51 (-5.42, 2.40), p=0.448
Symptom duration, months	0.00 (-0.04, 0.05), p=0.879
Uses arms to rise from chair	2.65 (-1.50, 6.81), p=0.210
Physiotherapy before baseline	-0.23 (-4.78, 4.31), p=0.920
1 injection before baseline	2.35 (-2.87, 7.56), p=0.377
≥2 injections before baseline	6.53 (-2.50, 15.57), p=0.156
Total SPADI	0.62 (0.35, 0.89), p<0.001
Shoulder activity score	-0.59 (-1.15, -0.04), p=0.037
P-SEQ score	-0.20 (-0.46, 0.07), p=0.141
Brief IPQ score	0.19 (-0.16, 0.54), p=0.298
HADS score	0.01 (-0.38, 0.41), p=0.947
Constant**	35.44 (29.50, 41.38), p<0.001

*Interpreted as unit difference in Rasch-transformed SPADI score per 1 additional unit of the independent variable **Estimated SPADI at 26 weeks in patients in the reference category for all categorical variables and with mean values for continuous covariates. ACJ=acromioclavicular joint; HADS=hospital anxiety and depression scale; IPQ=illness perception questionnaire; P-SEQ=pain self-efficacy questionnaire; RC=rotator cuff; SPADI=shoulder pain and disability index

Figure 1. Trajectories of total SPADI over time by the pathology groups found and response to injections

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POS1270

MUSCULOSKELETAL MANIFESTATIONS IN A COHORT OF 234 INFLAMMATORY BOWEL DISEASE PATIENTS

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