POS0372

USE OF TELEMEDICINE FOR FOLLOW-UP OF LUPUS NEPHRITIS IN THE COVID-19 OUTBREAK: ONE-YEAR, PRAGMATIC RANDOMISED CONTROLLED TRIAL

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Background: Patients with systemic lupus erythematosus (SLE) are at increased risk of severe COVID-19 due to the underlying disease, comorbidities and use of immunosuppressants (IS). An alternative option would be to adopt telemedicine (TM) to maintain medical care while minimizing exposure. Despite being widely adopted during the pandemic, the evidence supporting the use of TM in rheumatology has been limited.
Objectives: We primarily aimed to evaluate the effectiveness to maintain disease activity control using TM delivered care compared to conventional in-person follow-up in patients with lupus nephritis (LN). The secondary objectives were to compare the patient reported outcomes, safety and cost-of-illness from the patient's perspective between the 2 modes of health care delivery.
Methods: This was a 1-year, single-center, RCT conducted at a regional hospital in Hong Kong. From May 2020, consecutive adult patients with a SLE according to the 2019 EULAR/ACR classification criteria followed up at the LN clinic were invited to participate in the study. Participants were randomized 1:1 to either TM (TM group) or standard FU (SF group). Patients randomized to receive TM FU were scheduled for a video consultation via a commerical software ZOOM. Patients in the SF group received standard in-person outpatient care. SLE disease activity at each consultation was assessed by SLEDAI-2k and physician global assessment (PGA).
Results: A total of 144 patients with LN were randomized and 3 patients self-withdrew from the study. The mean age was 44.5±11.4 years and the median time from diagnosis to randomization was 168 months (range: 1-528). Most of the patients had class III, IV or V LN (87.2%) and were on prednisolone (89.4%, median dose 5mg daily). Many of them (68.1%) were on IS. While 66.0% of the patients were in lupus low disease activity state (LLDAS), none had disease remission. There were no baseline differences, including demographics, SLEDAI-2k (TM: 3.8±2.3, SF: 3.2±2.2, p=0.13, PGA (TM: 6.2±6.5, SF: 4.6±5.9, p=0.13) and SLE damage index (TM: 1.1±1.3, SF: 0.8±1.1, p=0.10), between the 2 groups.
At one year, 80.0% and 80.2% of the patients in the TM group and SF group were in LLDAS or remission respectively. SLE disease activity indices including SLEDAI-2k, PGA, proteinuria amount and serum anti-ds-DNA level remained similar between the 2 groups. Within the study period, 28 (40%) patients in the TM group and 21 (29.6%) patients in the SF group had disease flare (p=0.20). There were no differences in the SF-36, lupusQoL and HADS scores between the 2 groups at the end of the study. The overall patient satisfaction score was higher in the TM group with a significantly shorter waiting time before seeing doctors. At the end of the study, 67.9% of the overall participants agreed to (versus 15.0% who did not agree to) use TM as a mode of future FU. The mean indirect costs of illness (HKD26,681 vs HKD12,016, p=0.20) and the out-of-pocket costs for health care services were similar between the 2 groups (TM: HKD13,547 vs SF: HKD12,297, p=0.83) in one year. The total number of FU was similar (TM: 6.0±2.0, SF: 5.7±1.7, p=0.40). However, significantly more patients in the TM group (29/70, 41.4% vs 4/71, 5.6%; p<0.01) requested change mode of FU. The proportion of patients requiring hospitalization during the study period was also higher in the TM group (TM: 23/70, 32.9% vs 11/71, 15.5%; p=0.02). After adjusting for age and prednisolone dosage, not being in LLDAS at baseline was the predictor of hospitalization (OR 3.4, 95%CI 1.20-9.65). None of the participants was tested positive for COVID-19.
Conclusion: TM FU resulted in similar 1-year disease activity control and better satisfaction in patients with LN compared to standard care. However, a significant proportion of patients cared by TM required in-person visits or were hospitalized. The results of the study suggest that TM delivered care could help minimizing exposure to COVID-19, but it needs to be complemented by physical visits, particularly in those with unstable disease.
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Telemedicine what does it tell us

POS0373

WHO ARE IN AND WHO ARE NOT? CHARACTERISTICS OF PATIENTS WITH INFLAMMATORY RHEUMATIC DISEASES ACCEPTING AN ONLINE SYSTEM FOR REMOTELY ENTERING PATIENT REPORTED OUTCOMES. EXPERIENCE FROM THE DANISH DANBIO REGISTRY

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Background: Digital solutions for online monitoring of chronic diseases are increasingly implemented in health care, but not all patients might have access, skills, or interest in using them. Fueled by the COVID-19 pandemic and the urgent need for remote consultations, an online website to enter patient-reported outcomes (PROs) from home (DANBIO-from-home, https://danbio.dk) was implemented on May 15th 2020 for patients with inflammatory rheumatic diseases (IRD) followed in the Danish nationwide DANBIO registry.
Objectives: To explore the use of DANBIO-from-home during the first 1½ year after launching, with focus on a) characteristics of patients who did versus who did not access the webpage, and b) impact of patient age on time to first entry.
Methods: DANBIO-from-home allows PROs to be entered remotely by computer, tablet, or smartphone after secure log-on. All patients followed in DANBIO were informed about this option by invitations sent through eBoks, a national infrastructure for electronic communication, available to 80-90% of Danish citizens. Patients were encouraged to access DANBIO-from-home before planned rheumatology consultations, or when participating in the voluntary questionnaire survey 'You and your rheumatic disease during times with corona-virus' (on three occasions: May 2020, Nov 2020, June 2021) (ref). Follow-up ended Dec 1st 2021. Characteristics of patients who did/did not access DANBIO-from-home during follow-up are explored by multivariable logistic regression analyses adjusted by clinical factors (gender/age-group/diagnosis/disease duration/use of biologics/HAQ/PASS). Time to first entry of PRO using DANBIO-from-home is presented as cumulative incidence curves by age group.
Results: Among 33,776 patients with inflammatory rheumatic diseases followed in DANBIO, 68% used DANBIO-from-home at least once during follow-up (Table 1). Patients who used the system were less frequently below 40 years or above 80 years old, more frequently biologically treated and had lower HAQ-score than patients who did not use it.

Table 1.

		Data entry, DANBIO-from-home solution N=33,776	
		YES, 68%	NO, 32%
Gender, female		64	36
Gender, male		78	22
Age strata, yrs	< 40	62	38
	40-60	73	27
	61-80	72	28
	>80	39	61
Diagnosis	RA	67	23
	AxSpA	69	31
	PsA	70	30
Biologic treatment, yes*		73	27
PASS, yes		71	29
Age, yrs, median (IQR)		62 (52-71)	65 (50-77)
Time since diagnosis, yrs, median (IQR)		9 (5-16)	10 (5-17)
HAQ, median (IQR)		0.5 (0.125-1.0)	0.625 (0.125-1.25)

Row percentages unless otherwise shown* latest visit before March 2020AxSpA: Axial spondyloarthritis, HAQ: health assessment questionnaire, PASS: patient acceptable symptom scale, PsA: psoriatic arthritis, RA: rheumatoid arthritis

In logistic regression analyses, factors associated with DANBIO-from-home access were: female gender (odds ratio, OR 1.2 (1.1;1.3)), age group 40-60

(1.8 (1.6;2.0)) or 61-80 yrs (1.9 (1.7;2.19) and not age >80 yrs (0.6 (0.5;0.7) with age <40 as the reference), biologic treatment (1.4 (1.3;1.5)), higher HAQ (1.3 (0.3;1.4)), scoring PASS 'no' (1.1 (1.02;1.2)) (all p <0.001), whereas disease duration and diagnosis had no impact.

Time to first entry was longest in in patients >80 yrs followed by the <40 yrs group. For all age-groups, and most pronounced for age <40 yrs, the use increased when invitations to questionnaire surveys were sent out. (Figure 1)

Conclusion: A web-based system for secure remote entry of PROs was well-received after a nationwide launch. Patient-related factors had a substantial impact on the use. Lower use in the elderly might indicate lack of technical skills or facilities, whereas low use in younger age groups, which improved over time, is likely driven by other factors. Further analyses are planned to explore if lack of use impacts treatment outcomes.

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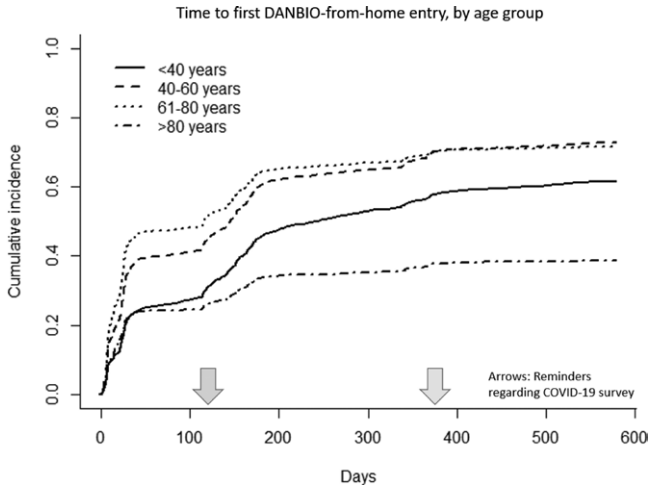

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POS0374

MONITORING CHRONIC INFLAMMATORY MUSCULOSKELETAL DISEASES WITH A PRECISION DIGITAL COMPANION PLATFORM(TM)–RESULTS OF THE DIGIREUMA FEASIBILITY STUDY

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Background: Patients with rheumatic and musculoskeletal diseases (RMDs) require a tailored follow-up that is limited by the capacity of healthcare professionals. Innovative tools need to be implemented effectively in the clinical care of patients with RMDs.

Objectives: To test the feasibility of a Precision Digital Companion Platform™ for real-time monitoring of disease outcomes in patients with rheumatoid arthritis (RA) and spondyloarthritis (SpA).

Methods: Digireuma was a prospective study including patients with RA and SpA, using the digital Precision Digital Companion Platform, Adhera for Rheumatology (ISRCTN11896540). During a follow-up of 3 months, patients were asked to report disease specific electronic patient reported outcomes (ePROs) on a regular basis in the mobile solution. Two rheumatologists monitored these ePROs and, patients were contacted for online or face-to-face interventions when deemed necessary by clinicians (Figure 1). Assessment measures included patient global assessment (PGA) of disease activity, tender joint count (TJC), swollen joint count (SJC), Health Assessment Questionnaire (HAQ) and pain visual analogue scale (VAS), for patients with RA; VAS, PGA, TJC, SJC, Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath Ankylosing Spondylitis Functional Index (BASFI) and ASAS Health Index (ASAS-HI), for patients with SpA. In addition, flares, changes in medication and recent infections were asked. Usability of the digital solution was measured by the Net-Promoter Score (NPS).

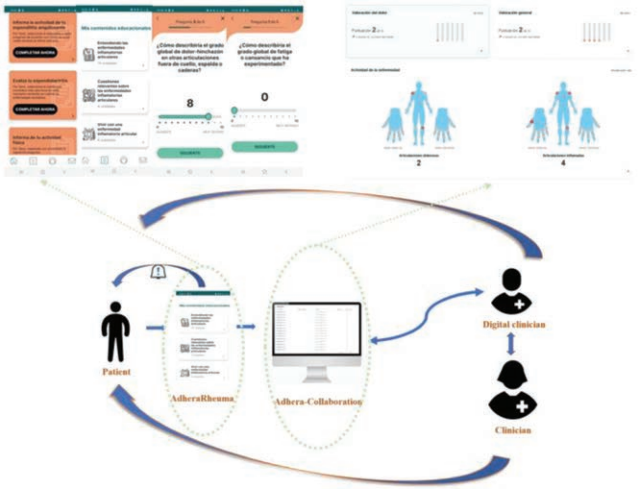

Figure 1. Digital monitoring in the study powered by Adhera for Rheumatology. Screenshots in top depict the mobile interface (left) and clinical web application (right)

Results: Forty-six patients were recruited of whom 22 had RA and 24 SpA. Mean age was 48 ± 12 and 42 ± 9 years in the RA and SpA groups, respectively. 18/22 (82%) patients with RA and 9/24 (38%) with SpA were female. Among the total included patients, 41 (89%) completed the onboarding (18/22 (82%) RA, 23/24 (96%) SpA) and 37 (80%) submitted at least one entry. In the RA group who completed the onboarding (n=18) there were a total of 4019 total interactions (2178 questionnaire items, 648 accesses to educational units, 105 quizzes, 1088 rated messages), while patients with SpA (n=23) had a total of 3160 interactions (1637 questionnaire items, 684 accesses to educational units, 77 quizzes, 762 rated messages). ePROs measurements completion rates for RA and SpA patients that completed any data during follow-up are shown in Table 1. Patients with RA completed a median of 9.5 ePROs during follow-up, whereas patients with SpA completed a median of 3. Regarding alerts, 15 patients generated a total of 26 alerts, of which 24 were flares (10 RA, 14 SpA) and 2 were problems with the medication (1 RA, 1 SpA). 18 (69%) of the alerts were managed remotely, 5 (19%) required a face-to-face intervention and in 3 (12%) patients did not respond before the consultation. Regarding usability and patient satisfaction, 14 patients provided feedback. According to the NPS, 9/14 were considered promoters, 4/14 passives and 1/14 detractor. The overall rating of these 14 patients for the app was 4.3 out of 5 stars.

Table 1. Onboarded patient engagement with regards to e-PROs

Rheumatoid Arthritis (n=18)						
	PGA	TJC	SJC	VAS	HAQ	Total
ePROs completed	1.5 (0.25, 3)	2 (0.25, 3)	2 (0.25, 3)	2 (0, 3)	2 (1, 3)	9.5 (4.3, 15.8)
Patients with ≥ 1 entry	13 (72.2)	13 (72.2)	13 (72.2)	12 (66.7)	16 (88.9)	16 (88.9)
Spondyloarthritis (n=23)						
	PGA	TJC	SJC	BASDAI	ASAS-HI	Total
ePROs completed	1 (0,3)	1 (0,3)	1 (0,3)	1 (0,2)	1 (0,2)	3 (1, 12)
Patients with ≥ 1 entry	16 (69.5)	16 (69.5)	16 (69.5)	14 (60.8)	14 (60.8)	21 (91.3)

Follow-up period was 3 months. Results are expressed in median (Q1, Q3) and n (%)

Conclusion: This study shows that the use of a digital health solution is feasible in clinical practice. Based on these preliminary results, the next step will be to further implement the Precision Digital Companion Platform, Adhera for Rheumatology, in a multicentric setting to analyze the added value for monitoring patients.

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