treatment. BRASS Registry will be important to enhance research and to develop public health planning.

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THU0695

DIFFERENCES OF LIFESTYLE HABITS OF SMOKING, DRINKING ALCOHOL AND CAFFEINATED COFFEE CONSUMPTION BETWEEN RHEUMATOID ARTHRITIS PATIENTS AND HEALTHY CONTROL – TOMORROW STUDY-

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Background: Previous reports indicated the strong association between smoking and onset of rheumatoid arthritis (RA), and relation between some of lifestyle habit and disease activity of RA.

Objectives: In this study, we compared differences in habits of smoking, alcohol consumption, coffee and Japanese tea intake between RA patients and healthy volunteers (Vo) in the same study population.

Methods: This study was conducted based on baseline data from ongoing 10-years prospective cohort project TOMORROW study (UMIN000003876), which includes age and sex matched RA patients (n=208) and Vo (n=205). Data on smoking history and alcohol (Alc), coffee and Japanese tea intake were collected by self-reported questionnaires. Alc intake was categorized into 3 groups by calculating the amount per day using Alc unit (pure Alc 20 mg/Alc unit). We also categorized frequency of Alc intake per week into 3 groups, number of cups of coffee and Japanese tea intake per day into 4 groups each. The data of RA patients included anthropometric, blood test data, disease activity score28-ESR (DAS28-ESR), together with baseline characteristics. Using logistic multivariate regression lifestyle habits were compared between RA and Vo.

Results: We analyzed 191 Vo and 198 RA with complete data about lifestyle habits. Demographic data and lifestyle habits of RA and Vo were shown in the Table 1 and 2. In RA patients, the average disease activity score 28-ESR (DAS28-ESR) was 3.49±1.34 and disease duration was 13.9±11.8 years. In multivariate analysis, smoking history (OR 5.03, 95% CI 1.42-17.9; p=0.04), 2 - 6 unit of Alc intake per day (OR 0.20, 95%CI 0.04-0.96; p=0.04) and 0 - 1 cup of caffeinated coffee intake per day (OR 0.26, 95%CI 0.07-0.91; p=0.04) were significantly different between RA and Vo. However, there were no significant difference in Alc frequency, decaffeinated coffee and Japanese tea intake.

Conclusion: As shown in previous reports, the smoking history was significantly higher in RA patients with an odds ratio of 5.03. And moderate intake of Alc and caffeinated coffee seems to be low in RA patients.

Table 1. Demographic data of rheumatoid arthritis patients (RA) and healthy volunteer (Vo).

	RA (N=198)	Vo (N=191)	p.value*
Age	58.4±12.6	57.0±13.2	0.28
Sex female	167 (84.3)	158 (82.7)	0.68
BMI	22.7±3.64	22.6±3.20	0.72
Disease duration (year)	13.9±11.8		
ACPA positivity	166 (83.8)		
RF positivity	136 (68.7)		
DAS28-ESR	3.49±1.34		
mHAQ	0.47±0.59		
Methotrexate dose (mg/week)	6.54±3.76		
bDMARDs use	104 (54.5)		

Values are mean±SD, or n (%). *Student-T-test and Fisher's exact test for RA and Vo.

BMI, body mass index; Alc, alcohol; mHAQ, modified Health Assessment Questionnaire; bDMARDs, biologic disease modified anti-rheumatic-drugs.

Table 2. Lifestyle habits of rheumatoid arthritis patients (RA) and healthy volunteer (Vo).

	RA (N=198)	Vo (N=191)	p.value*
Smoking history	59 (29.8)	29 (15.2)	<0.01
Alc frequency (/week)			0.17
0	94 (47.5)	76 (39.8)	
1-5	77 (38.9)	77 (40.3)	
6-	27 (13.6)	38 (19.9)	
Alc (unit/day)			0.09
-2	147 (74.2)	125 (65.4)	
2-6	21 (10.6)	34 (17.8)	
6-	30 (15.2)	32 (16.8)	
Caffeinated coffee (cup/day)			0.19
0	45 (22.7)	27 (14.1)	
0-1	67 (33.8)	71 (37.2)	
1-4	69 (34.8)	75 (39.3)	
4-	17 (8.6)	18 (9.4)	
Decaffeinated coffee(cup/day)			0.14
0	188 (94.9)	188 (98.4)	
0-1	8 (4.0)	3 (1.6)	
1-4	2 (1.0)	0 (0.0)	
4-	0 (0.0)	0 (0.0)	
Japanese tea (cup/day)			0.43
0	18 (9.1)	17 (8.9)	
0-1	42 (21.2)	53 (27.7)	
1-4	66 (33.3)	63 (33.0)	
4-	72 (36.4)	58 (30.4)	

Values are n (%). *Fisher's exact test for RA and Vo.

Alc, alcohol.

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HPR Service developments, innovation and economics in healthcare

THU0696-HPR

TRANSITION READINESS ASSESSMENT TOOLS (TRAT): A PRELIMINARY SINGLE-CENTRE PAEDIATRIC RHEUMATOLOGY TRANSITION PROGRAMME (PRTP) EXPERIENCE AND OUTCOMES IN SINGAPORE

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Background: Majority of childhood onset rheumatic diseases often continue into adulthood. Care for these youth especially during their transition from child centred to adult oriented healthcare system is crucial and challenging. The Paediatric Rheumatology Transition Programme at KK Women's and Children's Hospital (KKH) in Singapore was developed in 2016. In 2017, we have adopted the American College of Rheumatology Transition Readiness assessment tools (TRAT) with modification to assess the readiness of our paediatric rheumatology patient cohort.

Objectives: To assess factors contributing to the outcomes of Paediatric Rheumatology Transition Programme at our institute using the Transition Readiness Assessment Tools (TRAT)

Methods: The TRAT composed of 4 components – transition-importance, transition-confidence, medical knowledge/healthcare usage (MKHU-23 questions), transition-readiness assessment questionnaires (TRAQ, 5 domains – medicine management (MM), appointment management (AM), health issue tracking (HT), communications with providers (CP) and daily activity management (DAM)). Each component score was computed into 0-10 (scores >7 defined acceptable responses). Nonparametric statistics were used to describe and analyse the data.

Results: 106 patients (52.8% female) with SLE(42.5%) and JIA(50.0%) with median age of 20.0 (18.8-20.6) years were recruited. Median

duration of disease at 1st assessment was 7.0 years (IQR 5.5-8.8). 24 patients were transitioned successfully. Only 60% of our youths felt that transition preparation is important and had confidence to be prepared for/ change to adult healthcare system (AHCS). Among the less confident group (scores <7), MKHU, MM, AM and HT domains scored significantly less than those from confident youths ($p<0.001$ - 0.021), but only transition importance MKHU scores were <7. Disease duration at first TRAT assessment and diagnoses did not predict confidence level. With further targeted education and counselling (median 8.3 months (IQR 5.7-9.6)), confidence and MKHU was significantly improved ($p=0.001$).

Conclusion: TRAT enables our PRTP team to learn and understand our local youths' perception and readiness of adult transition process. More than one-half of them did not aware of the importance of the transition process and had less confidence to do so. With further targeted counselling and preparation, all improved their perception and MKHU significantly. TRAT was able to guide individualize counselling to our cohort youths who are ready to be transitioned.

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THU0697-HPR CONTENT OF AND RHEUMATOLOGISTS' AND NURSES' OPINIONS ON A NURSE-LED TELEPHONE HELPLINE

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Background: To improve timely response to patients' questions and to support that care is provided by the appropriate professional, a nurse-led rheumatology telephone helpline was introduced in May 2015. Different organisational approaches have been tried out to ensure an effective as well as efficient service. Currently a voicemail system is used. A selection menu allows patients to select whether he/she needs 1) advice regarding disease complaints, 2) drug prescriptions, 3) (change in) appointment at the clinic, 4) laboratory forms.

Although the menu differentiates between requests, organising timely responses by the appropriate professional remains a challenge. Clear and joint definitions by the rheumatologists and nurses on what questions to what extent should be addressed by whom, are necessary.

Objectives: To facilitate further improvement of the helpline we explored 1) number and content of questions that were registered; 2) experiences of rheumatologists and nurses with the helpline; 3) opinions of rheumatologists and nurses on which questions should be answered via the helpline.

Methods: A file research explored the number of questions and reasons for contacting the helpline. Data were analysed descriptively. In semi-structured interviews among all rheumatologists ($n=8$) and nurses involved in manning the helpline service ($n=6$), experiences and opinions were explored. System Engineering Initiative Patient Safety (SEIPS) model, that focuses on system design and its interaction with processes, and outcomes for patients, employees and organisation [1], was used to structure thematic coding of the transcripts.

Results: In 37 months, the helpline registered 3389 calls (see Table 1). A majority of the questions was about disease complaints (28.6%) or other related problems such as pain management, and exercise (27.8%). The proportion of requests for prescriptions was 21.8%.

The interviews revealed that both rheumatologists and nurses considered the helpline valuable in providing easy access to care for patients with disease related questions. This should be the primary aim. The rheumatologists also valued their reduced workload, which occurred most if the knowledge of the nurse was sufficient to take care of the responses independently. Moreover, they valued if requests, such as prescriptions, were clustered by the nurses. The nurses experienced an increased workload. Sufficient knowledge on and training in rheumatology, and being familiar with the patient were considered pivotal in providing appropriate and for the patient acceptable care. As nurses cannot prescribe medication, the requests for prescriptions were considered inappropriate. Availability of protocols and guidelines were considered prerequisites by all for responding to patients' requests appropriately.

Conclusion: The helpline is used frequently and the selection menu has helped to gain insight in why the helpline is used by patients. There is consensus on the primary aim of the helpline and on prerequisites for nurse-led responses to patients' disease related questions. Rheumatologists and nurses have different opinions on some issues, such as the

organisation of prescriptions. Our study findings can help in jointly improving consensus on the content of nursing care within the helpline.

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Abstract THU0697HPR Table 1. Reasons for contacting the helpline

Calls May 2015-July 2018	
Reasons	N (%)
Disease complaints	970 (28.6)
Medication prescriptions	739 (21.8)
Medication side-effects	353 (10.4)
Appointments	184 (5.4)
Lab forms	126 (3.7)
Other*	943 (27.8)
Total	3389

*Other: a variety of requests e.g. advice for pain management, exercise, work participation, referrals for devices.

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THU0698-HPR MORE EFFICIENT DMOAD TRIALS THROUGH INNOVATIVE SCREENING STRATEGIES

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Background: In randomized Clinical Trials (RCT), the number of patients to recruit for assessing effectiveness of disease-modifying OA drug (DMOAD) depends on the proportion of progressors in the population. The higher this proportion, the smaller the cohort to be recruited. In the general OA population, this proportion is quite low (10-30%) [1] requiring large cohorts, hence long and expensive trials.

Objectives: We study how predictive modeling based on early cartilage degradation biomarkers can be used to screen patients, make individual predictions about the likelihood of future progression, and recruit on this basis a progressor-enriched cohort. By doing so, DMOAD RCTs could achieve same or better success rates based on smaller cohorts and lower budgets, even taking into account the extra cost of this innovative screening.

Methods: Two biomarkers (Coll2-1 & Coll2-1-NO2, Artialis, Belgium) have been measured at baseline on 182 OA patients from the placebo arm of a previous RCT. For this cohort, progression at 30M is defined as in [2]. We developed two predictive models of the progression of the patients over 30 months through regularized logistic regressions: one based on Coll2-1 only, the other on Coll2-1 and Coll2-1-NO2. Based on these models, we design a strategy to produce cohorts of patients with a higher rate of progressors than the natural proportion. To do so, we make hypotheses on the expected drug effect (from 30% to 50%), on the costs generated by a trial designed according to a regular strategy (i.e. not using baseline markers for patients inclusion/exclusion), and on the costs generated by this innovative screening strategy (a.o. nb patients screened, enrolled, costs of visits, imaging, biomarkers when applicable). Based on these hypotheses, we optimize sensitivity/specificity trade-offs of each model, so as to reduce the sample size required to prove the expected effect.

Results: When we apply this strategy to realistic scenarios, both models produce substantial cost reductions (up to 30%) even considering the extra cost of the biomarker-based screening of a higher number of candidate participants. They also lead to cohort size reductions: almost 40% less patients needed. As an example, we considered a natural progressor rate of 20%, an actual effect of 50% for the DMOAD to be tested, and a study consisting in a screening visit, 4 follow-up visits, 2 x-rays, 2 MRI, and a final visit. Hypotheses have been made about costs of each of these items, according to Belgian practice. In the standard case, all screened patients satisfying inclusion criteria are recruited. In the modified version, only patients for which inclusion criteria are met and the tuned biomarker-based model turns positive are enrolled. In the standard version of such a study, 554 patients have to be recruited, with a cost of 1,767,260€. Through the optimized strategy, 1190 patients are screened,