plus remission by DAS28-erythrocyte sedimentation rate (ESR), Clinical Disease Activity Index (CDAI), and Simplified Disease Activity Index (SDAI). Bangla version of the Health Assessment Questionnaire-Disability Index (B-HAQ) response and the mean changes of the core set of outcomes from baseline at 24 weeks were analyzed. Changes in acute phase reactants and composite measures within the groups from baseline to 24 weeks were also analyzed.

Results: At 24 weeks, LDA plus remission in DAS28-CRP was attained in 38 (84.4%) and 18 (45.0%) patients in the baricitinib 4 mg and 2 mg groups, respectively (P=0.01). In the 4 mg and 2 mg groups, this was achieved in 16 (35.6%) and 6 (15%) patients, respectively (P= 0.03). In CDAI, LDA plus remission was achieved in 37 (82.2%) patients in the 4 mg and 20 (50.0%) patients in the 2 mg group (P=0.01), while in SDAI, it was achieved in 36 (80.0%) patients in the 4 mg and 19 (47.5%) patients in the 2 mg group (P=0.02). Except for ESR, the core set of outcomes also improved significantly in the baricitinib 4 mg group than in the 2 mg group (P<0.05). The functional status (measured by B-HAQ) significantly decreased within the groups (P<0.05). Two patients (4.5%) in the 4 mg group and 1 (2.5%) in the 2 mg group developed herpes zoster. Five (12.5%) patients in 2 mg group and 11 (24.4%) in 4 mg group developed skin eruptions/itching. None of the study subjects developed tuberculosis, malignancy, or venous thromboembolism. There were no reported cases of death. Elevated liver enzyme developed in 4 (8.9%) patients in the 4 mg group and none in the baricitinib 2 mg group. Renal impairment was seen in 3 (7.5%) patients in 2 mg and 1 (2.2%) in the 4 mg group.

Conclusion: Baricitinib 4 mg is more effective than baricitinib 2 mg in patients with RA who had an inadequate response to methotrexate. In terms of safety, there were no significant difference between the group. Trial registration number **NCT05660655.**

REFERENCES: NIL.

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POS0612 EFFECTS OF CUMULATIVE LIFETIME ESTROGEN EXPOSURE ON THE CLINICAL CHARACTERISTICS AND COURSES IN POSTMENOPAUSAL WOMEN WITH RHEUMATOID ARTHRITIS

Keywords: Pregnancy and reproduction, Patient Reported Outcome Measures, Pain, Outcome measures, Observational studies/registry

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Background: Since rheumatoid arthritis (RA) is more prevalent among women than men, previous studies have explored the association between various female hormonal factors and the development or progression of RA. Cumulative lifetime estrogen exposure (CLEE) is defined as the summation of endogenous and exogenous exposure of estrogen, and its association with several chronic diseases and quality of life has been suggested. However, none has evaluated how CLEE affects longitudinal changes in the validated disease activity indices or patient-reported outcomes (PROs) of RA over time.

Objectives: We aimed to investigate the differences in clinical characteristics between RA patients with lower and higher CLEE using validated disease activity indices and PROs of RA, and to determine the impact of CLEE on the disease course of RA over time using a large nationwide observational RA cohort in Korea.

Methods: We included 2878 postmenopausal women with RA from the Korean Observational Study Network for Arthritis. Patients were examined at baseline and for five consecutive years using the Simplified Disease Activity Index (SDAI), Clinical Disease Activity Index (CDAI), Disease Activity Score 28 (DAS28), Health Assessment Questionnaire-Disability Index (HAQ-DI), and other PROs. CLEE was calculated by combining reproductive span (age in years at menopause minus age at menarche) and duration of any postmenopausal hormone replacement therapy uses. RA patients were then classified into lower and higher CLEE groups based on the median of 34 years of estrogen exposure. Generalised estimating equation (GEE) analyses were performed to evaluate the impact of CLEE on longitudinal changes in RA activity and PROs.

Results: RA patients with lower CLEE (N=1602) were younger (60.1±8.9 vs. 60.8±7.0 years, p=0.024) but had longer disease duration (8.9±7.9 vs. 8.3±7.6 years, p= 0.034) than those with higher CLEE (N=1179). The lower CLEE group had significantly higher disease activity assessed by SDAI (14.6±10.6 vs. 13.2±9.3, p<0.001), CDAI (13.8±10.2 vs. 12.4±9.1, p<0.001), and DAS28 (4.0±1.4 vs. 3.9±1.3, p=0.004) and more radiographic erosion (20.0% vs. 16.9%, p=0.044) than the higher CLEE group at baseline. Furthermore, the lower CLEE group demonstrated worse PROs for global assessment, pain, fatigue, sleep disturbance, functional disability, and health-related quality of life (all p<0.01) than the higher CLEE group at baseline. The GEE model showed that the lower CLEE group was significantly associated with an increase in SDAI (β=0.518, p=0.007) over time after adjusting for age, BMI, disease duration, biologics use, and SDAI at baseline. The lower CLEE group was also significantly associated with an increase in HAQ-DI scores (β=0.050, p<0.001) and a decrease in EQ-5D-utility values (β=-0.024, p<0.001) during the 5-year follow-up period. Among RA patients with active disease at baseline (SDAI>11), the lower CLEE group was significantly associated with not achieving Boolean remission after adjustment for confounders during the follow-up period [HR 0.597 (95% CI 0.421-0.848), p=0.004] (Table 1).

Conclusion: RA patients with lower CLEE have higher disease activity, more erosive disease, and worse PROs than those with higher CLEE. Moreover, lower CLEE adversely affects longitudinal changes in disease activity and PROs over time and is also associated with a lower likelihood of achieving clinical remission in RA.

	Point remission			
	Univariate analysis		Multivariate analysis	
Variable	HR (95% CIs)	p-value	HR (95% CIs)	p-value
Lower CLEE group	0.632 (0.459-0.872)	0.005	0.597 (0.421-0.848)	**0.004**
Age	0.983 (0.964-1.003)	0.101	-	-
Disease duration	0.973 (0.950-0.996)	0.022	0.973 (0.950-0.997)	0.031
Body mass index	1.008 (0.960-1.059)	0.740	-	-
Seropositivity	1.345 (0.744-2.431)	0.327	-	-
Pain VAS	0.987 (0.981-0.993)	<0.001	0.996 (0.988-1.004)	0.331
Fatigue VAS	0.983 (0.978-0.989)	<0.001	0.988 (0.981-0.995)	0.001
Sleep disturbance VAS	0.988 (0.983-0.994)	<0.001	0.996 (0.989-1.003)	0.226

HR, hazard ratio; CI, confidence interval; CLEE, cumulative lifetime estrogen exposure; VAS, visual analogue scale.

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Disclosure of Interests: None declared.

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POS1029 RELATIONSHIP BETWEEN LAUGHTER AND PHYSICAL FUNCTION IN RHEUMATOID ARTHRITIS PATIENTS

Keywords: Observational studies/registry, Epidemiology, Lifestyles, Patient Reported Outcome Measures

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Background: Rheumatoid arthritis (RA) patients have a higher incidence of depression than the general population [1]. It has been reported that depression is associated with physical function in RA patients [2]. The decline in physical function can lead to various poor health outcomes. On the other hand, laughter has been reported to be effective in improving health outcomes, including depression [3].

Objectives: This study aimed to investigate the relationship between laughter and physical function in RA patients.

Methods: Among patients who visited consecutively from June to August 2023, 667 RA patients were available for investigating patient backgrounds, including Clinical Disease Activity Index (CDAI) and Health Assessment Questionnaire Disability Index (HAQ-DI). HAQ-DI is widely used as an index of physical function and patient reported outcomes in RA patients. In the present study, HAQ-DI≤0.5 was defined as functional remission. Laughter frequency was divided into two groups: "every day, 1-5 times a week" and "1-3 times a month, almost never." The odds ratio (OR) of laughter related to physical function (functional remission) was calculated using multivariable logistic regression analysis.

Results: 446 (66.9%) were RA patients with HAQ remission. Age (HAQ remission group/non-HAQ remission group) was 66.9±13.7/71.8±12.6 years, disease duration was 10.9±8.7/16.4±11.3 years, and CDAI was 4.0±5.1/11.1±9.6, all of which were significantly higher in non-HAQ remission group. The laughter frequency ("every day"/"1-5 times a week"/"1-3 times a month"/"almost never") was 55.4%/33.0%/8.1%/3.6% in HAQ remission group and 35.7%/38.5%/12.7%/13.1% in non-HAQ remission group, with significantly less frequency in non-HAQ remission group. Adjusted for age, disease duration, sex, and CDAI, less frequent laughter ("1-3 times a month, almost never") was identified as significantly associated factors with non-HAQ remission (OR 2.25, 95% confidence interval 1.31-3.85).