Gilead Sciences, Mitsubishi-Tanabe, Novartis, Pfizer Japan, and Sanofi, Consultant of: Astellas, Chugai, and Eli Lilly Japan, Grant/research support from: AbbVie, Asahi Kasei, Astellas, Chugai, Daiichi Sankyo, Eisai, Mitsubishi-Tanabe, Shionogi, Takeda, and UCB Japan, Vijay Rajendran Shareholder of: Galapagos, Employee of: Galapagos, Jacques-Eric Gottenberg Speakers bureau: AbbVie, Eli Lilly and Co., Galapagos, Gilead Sciences, Inc., Roche, Sanofi Genzyme, and UCB, Consultant of: Bristol Myers Squibb, Sanofi Genzyme, and UCB, Grant/research support from: Bristol Myers Squibb and Pfizer, Alena Pechonkina Shareholder of: Gilead Sciences, Inc., Employee of: Gilead Sciences, Inc., YingMeei Tan Shareholder of: Gilead Sciences, Inc., Employee of: Gilead Sciences, Inc., Qi Gong Shareholder of: Gilead Sciences, Inc., Employee of: Gilead Sciences, Inc., Katrien Van Beneden Shareholder of: Galapagos, Employee of: Galapagos, Roberto Caporali Speakers bureau: AbbVie, Amgen, BMS, Celltrion, Galapagos, Janssen, Lilly, MSD, Novartis, Pfizer, Sandoz, and UCB, Consultant of: AbbVie, Amgen, BMS, Celltrion, Galapagos, Janssen, Lilly, Fresenius-Kabi, MSD, Novartis, Pfizer, Roche, Sandoz, and UCB

DOI: 10.1136/annrheumdis-2022-eular.1624

AB0395 DE-ESCALATION OF DMARDS IN ELDERLY PATIENTS WITH RA

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Background: Rheumatoid Arthritis is the most common form of inflammatory arthritis in older adults, with the mainstay of treatment being the conventional DMARDs (Tutuncu & Kavanaugh, 2007). These drugs are not without side effects, and as elderly people have higher rates of adverse drug reactions and less long-term benefits, the risk/benefit ratio is different compared to other age groups. This research sought to evaluate if the rheumatology department at Southend hospital was sufficiently acknowledging the changing circumstances of their elderly patients and de-escalating conventional DMARDs accordingly. As the average age of rheumatology patients is only likely to increase in the future, contextualising a patients treatment plan for their rheumatological disorder with their overall health status will become an increasingly important skill for clinicians and the observations from this study will be applicable to all who treat elderly patients with inflammatory disorders.

Objectives: 1. Evaluate if major new diagnoses were acknowledged in the rheumatology clinic and if conventional DMARD treatment was reduced in response. 2. Record and compare the outcomes of when conventional DMARD was stopped abruptly vs when it was tapered down slowly.

Methods: Evaluated 10 year's worth of clinic letters from rheumatology and other specialities in 50 patients with a diagnosis of RA over the age of 89. Noted new diagnoses of dementia, cancer and frailty (multiple falls, care home admission or becoming newly house bound) as well as acute hospital admissions and declining renal function and evaluated if this was acknowledged in clinic letters and whether treatment was changed in response. Recorded all instances where conventional DMARDs were stopped or had a dose reduction and evaluated if these dose drops were successful (patient stayed at reduced dose with no flares in disease activity), semi-successful (patient had mild RA flare treated with short course corticosteroids, or stayed at reduced dose for at least a year before returning to original dose) or unsuccessful (patient suffered flare and went back to original dose within 1 year.)

Results: Of the 50 patients, 31 received methotrexate monotherapy, 12 methotrexate and other conventional DMARDs, and 5 DMARDs other than methotrexate. 36 out of 45 patients receiving methotrexate had some decrease in dose by the end of the 10 year period, with the median decrease being 5mg. Patients on multiple DMARDs saw a greater average decrease in methotrexate compared to those on monotherapy. 15 abrupt cessations in methotrexate were recorded, with acute hospital admission being the most common trigger. Of these 3 were successful, 5 were semi-successful and 7 were unsuccessful. 55 planned methotrexate dose reductions in the rheumatology clinic were recorded, with 38 being successful, 9 being semi-successful and 8 being unsuccessful (Figure 1.). Clinic letters did generally acknowledge both new physical diagnoses and changes in social circumstances, but some diagnoses were more likely to trigger a change in treatment, for example in 8 new cancer diagnoses, there were 5 changes to treatment, whereas in 12 dementia diagnoses there were 3 changes to treatment. 6 patients received more methotrexate than guidelines suggest for their level of CKD, with 3 of these having it acknowledged in clinic letters.

Conclusion: Most patients had a reduction in dose of methotrexate over a 10 year period. Planned de-escalations were mostly successful, whereas abrupt stops to treatment were generally less successful. Rheumatologists are good at acknowledging changes to health status but were more likely to change DMARD therapy in response to a cancer diagnosis than a dementia diagnosis or frailty. There is still some work to be done in acknowledging declining renal function and changing methotrexate in response. Overall, these results suggest de-escalation is mostly successful and clinicians can be confident in further expanding this into their day to day practice.

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Acknowledgements: Many thanks to my supervisor Dr Fiona Hayes and the rest of the rheumatology team at Southend University Hospital for being so welcoming and allowing me to make full use of the tea supplies.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2022-eular.1639

AB0396 EFFECT OF A MULTIDISCIPLINARY LIFESTYLE PROGRAM IN PATIENTS WITH RHEUMATOID ARTHRITIS: THE PLANTS FOR JOINTS RANDOMIZED CONTROLLED TRIAL

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Background: Lifestyle factors have been associated with the development and progression of rheumatoid arthritis (RA). Interventions involving whole food plant-based diets (WFPDs), physical activity or stress management have shown promising results for people with RA but were not yet evaluated in an integrated program.

Objectives: To determine the effect of a 16-week multidisciplinary lifestyle program on disease activity in patients with RA.

Methods: In the "Plants for Joints" (PFJ) parallel-arm, assessor-blind randomized clinical trial, patients with RA and a 28-joint Disease Activity Score [DAS28] score ≥ 2.6 and ≤ 5.1, were assigned to the PFJ group or the control group. The PFJ group followed a lifestyle program based on a WFPD, physical activity, and stress management in addition to usual care. The control group received usual care. Medication was kept stable three months before and during the trial. Secondary outcomes included anthropometric, and metabolic markers. An intention-to-treat analysis with a linear mixed model, adjusted for baseline values was used to analyze between-group differences of continuous outcomes.

Results: Of 115 people screened, 85 were randomized and 79 completed the study. Participants were 91% female with a mean (SD) age of 55 (12) and body mass index of 26 (4) kg/m^2. After 16 weeks the PFJ group had a mean 0.85-point greater improvement of the DAS28 versus the control group (95% CI 0.40 to 1.30; p < 0.001) (Figure 1). Subgroup analyses showed significant improvements in the seropositive as well as the seronegative subgroup, although the effect was more profound in the seronegative group. Weight, fat mass, HbA1c, LDL and triglycerides also showed significant improvements in the PFJ versus control group, while blood glucose and HDL remained unchanged (Table 1). No serious adverse events occurred.

Table 1. Outcome Measures Plants for Joints Trial

Characteristic	PFJ group (*n* = 40) Mean (SD) baseline	PFJ group (*n* = 40) Mean (SD) 16 weeks	Control group (*n* = 39) Mean (SD) baseline	Control group (*n* = 39) Mean (SD) 16 weeks	Difference in change between groups (95% CI)	*p*-value[1]
DAS28 & components, mean (SD)						
DAS28	3.90 (0.69)	2.88 (1.12)	3.75 (0.72)	3.72 (1.04)	-0.85 (-0.40 to -1.30)	<0.001
DAS28 seropositive group (*n* = 57)	4.00 (0.69)	3.13 (1.18)	3.75 (0.74)	3.78 (1.08)	-0.69 (-1.26 to -0.12)	0.02
DAS28 seronegative group (*n* = 22)	3.72 (0.68)	2.41 (0.86)	3.73 (0.65)	3.52 (0.92)	-1.20 (-1.93 to -0.47)	0.005
ESR, mm/hr	17 (18)	17 (14)	19 (15)	23 (17)	-1.0 (-6.0 to 4.0)	0.7
Patient's global assessment, mm	53 (20)	25 (21)	51 (18)	47 (19)	-15 (-25 to -6)	0.002
Swollen joint count of 28 joints	1.8 (1.9)	1.4 (2.9)	1.8 (2.6)	2.3 (3.2)	-1.6 (-2.9 to -0.4)	0.01
Tender joint count of 28 joints	4.6 (3.6)	1.8 (2.8)	3.9 (3.6)	2.9 (2.8)	-2.2 (-3.6 to -0.8)	0.003
Other outcomes, mean (SD)						
Body mass index, kg/m^2	27.1 (4.6)	25.9 (5.0)	25.2 (3.7)	25.4 (3.9)	-1.5 (-2.0 to -1.0)	<0.0001
Weight, kg	76.8 (13.2)	73.3 (14.0)	72.3 (12.4)	72.7 (12.9)	-4.2 (-5.6 to -2.7)	<0.0001
Fat mass, kg	30.6 (10.0)	27.5 (9.9)	28.0 (8.0)	28.4 (7.9)	-2.7 (-3.7 to -1.7)	<0.0001
Fasting blood glucose, mmol/l	5.1 (0.4)	4.9 (0.5)	5.4 (1.6)	5.1 (0.5)	-0.1 (-0.4 to 0.1)	0.24
HbA1c, mmol/mol	35.5 (5.6)	34.7 (5.2)	37.6 (7.3)	38.4 (6.8)	-1.2 (-2.0 to -0.4)	0.004
LDL, mmol/l	2.92 (1.01)	2.65 (0.78)	3.44 (1.05)	3.21 (0.80)	-0.37 (-0.61 to -0.13)	0.003
HDL, mmol/l	1.63 (0.40)	1.56 (0.40)	1.69 (0.37)	1.65 (0.40)	-0.10 (-0.20 to 0.00)	0.06
Triglycerides, mmol/l	1.14 (0.55)	1.05 (0.43)	1.04 (0.56)	1.03 (0.50)	0.18 (0.04 to 0.32)	0.02

Seropositive subjects: positive for rheumatoid factor [RF] or anti-citrullinated protein antibodies [ACPA], seronegative subjects: negative for RF and ACPA. DAS28 = 28-joint disease activity score, SD = standard deviation, ESR = erythrocyte sedimentation rate, patient's global assessment based on a visual analogue scale (0-100 mm), CI = confidence interval, OR = odds ratio.
[1] P-values based on linear mixed model with random effect for between group analyses, adjusted for baseline values.

Conclusion: The 16-week PFJ lifestyle program substantially decreased disease activity in people with RA with low-moderate disease activity.

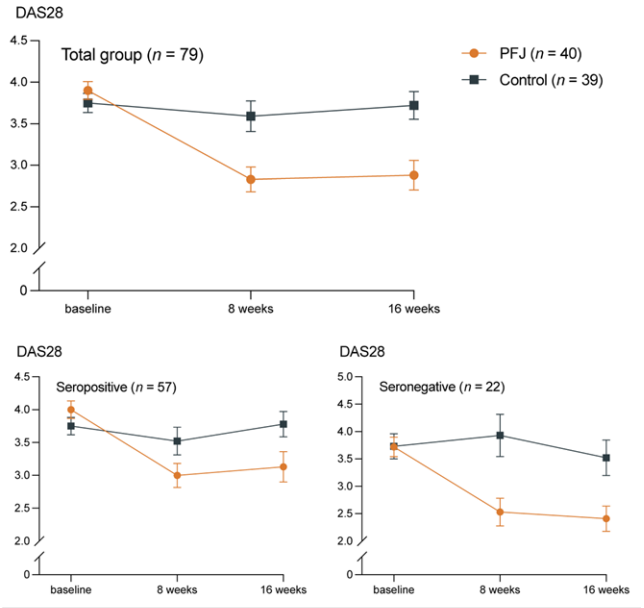

Figure 1. Change in disease activity score based on 28 joints (DAS28, primary outcome) for the total group ($p = 0.0005$) is presented in the top panel with mean ± standard error. The panels below present the same for seropositive subjects (positive for rheumatoid factor [RF] and/or anti-citrullinated protein antibodies [ACPA], $p = 0.02$) and seronegative subjects (negative for RF and ACPA, $p = 0.005$).

Disclosure of Interests: Wendy Walrabenstein: None declared, Carlijn Wagenaar: None declared, Marike van der Leeden: None declared, Franktien Turkstra: None declared, Jos Twisk: None declared, Maarten Boers Consultant of: Consultant for Novartis, Henriët van Middendorp: None declared, Peter Weijs: None declared, Dirkjan van Schaardenburg: None declared

DOI: 10.1136/annrheumdis-2022-eular.1689

AB0397

DISEASE ACTIVITY OF RHEUMATOID ARTHRITIS WERE SIGNIFICANTLY DECREASED BY SWITCHING JAK INHIBITOR TO ANOTHER JAK INHIBITOR

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Background: With the availability of multiple Jak inhibitors (JAKi) for treatment, patients with RA who have had inadequate response to conventional therapies, including biologics, can now achieve favorable outcomes such as remission and low disease activity. However, it is also true that no single JAKi therapy is effective for all RA. Some RA treatment guidelines recommend a switch strategy from current JAKi to other JAKi or biologics in patients with inadequate response to JAKi therapy [1]. There is insufficient evidence to support the efficacy of switching to another JAKi in patients with inadequate JAKi response (JAKi-IR).
Objectives: The aim of this study is to clarify the effectiveness of the strategy of controlling disease activity by switching to other JAKi in RA cases with JAKi-IR and to analyze the effect on serum cytokines related to the pathogenesis of RA.
Methods: RA patients who switched to other JAKi during treatment with JAKi between September 2017 and January 2022 were included in this retrospective study. The clinical characteristics of the included RA patients were collected from their medical records. The efficacy of the JAKi switch strategy was assessed by changes in composite measure scores of disease activity, including DAS28-CRP, SDAI, and CDAI, at 4 and 12 weeks after the switch. In addition, changes of serum cytokines associated with RA pathogenesis (IL-6, TNF-α) were measured and analyzed by ELISA (Simple Plex, Protein Simple).
Results: Twenty-nine RA patients who received the JAKi switch treatment strategy were included in the analysis. The clinical characteristics of the included patients are shown in Table 1. All patients were receiving JAKi due to inadequate response to biologics. JAKi were switched to control disease activity including 3 cases (10%) who achieved temporary remission. Figure 1 shows the effect of the JAKi switch strategy on the disease activity category. Evaluation using SDAI showed that 65% of patients achieved the immediate treatment goal of low disease activity at 4 weeks after switch, and 69% of patients maintained this goal at 12 weeks. SDAI remission was also observed in 17% of patients at 4 weeks and 31% at 12 weeks, demonstrating the efficacy of the JAKi switch strategy. The efficacy of the JAKi switch strategy was also observed in other measures of disease activity. Changes in serum cytokines (IL-6, TNF-α) associated with disease activity in RA before and after JAKi switch were analyzed in 10 patients. Regardless of the type of JAKi, serum IL-6 was decreased by JAKi switch in most cases at 12weeks (average change of serum IL-6: -27.25pg/ml). However, no trend was observed for changes in serum TNF- disease acti (average change of serum TNF-ed for change) . There was no clear association between changes in these two cytokines and the efficacy of the JAKi switch strategy.
Conclusion: The composite disease activity index showed that about 60% of JAKi-IR patients achieved low disease activity, one of the treatment goals, at 4 weeks after switching to JAKi, and the effect was maintained up to 12 weeks. This effect did not appear to be related to the type of JAKi. The effects of biologic therapy on serum cytokines associated with RA activity differed from the effects of the JAKi switch strategy.

Table 1. Baseline characteristics of the 29 patients enrolled this study

Clinical characteristics	n=29
Age	57 [48.0-66.0]
Sex (F/M)	22/7 (75.9)
Disease duration, years	13 [8.6-18.8]
RF positive	26 (89.7)
ACPA positive, (n=22)	20(90.0)
Concomitant medications	
Methotrexate, dose(mg/week)	10 (34.5), 8.0 [6.0-10.5]
Corticosteroid, dose(mg/day)	17 (59.0), 4.0 [2.0-5.0]
Disease activity	
DAS28-CRP	3.77 [3.2-4.6]
SDAI	15.5 [9.8-21.1]
CDAI	14.5 [9.5-20.0]
Patient global assessment of disease activity (mm)	40 [25-58]
Provider global assessment of disease activity (mm)	32 [15-40]
CRP (mg/dl)	0.9 [0.1-1.7]
TJC/SJC	4 [2-5], 2[2-5]

Date are n (%) or median [IQR].

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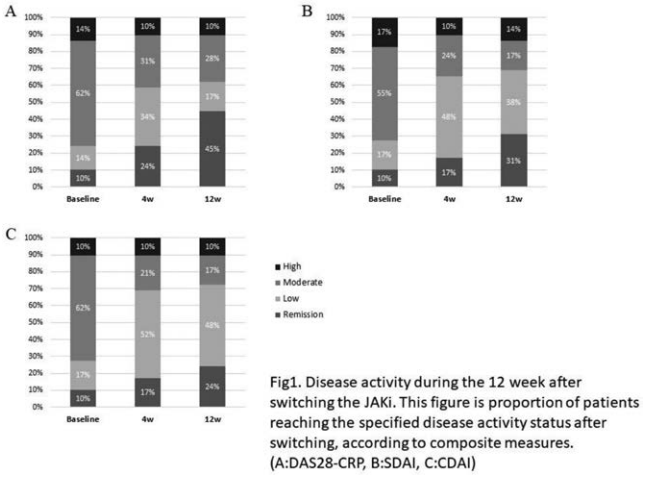

Fig1. Disease activity during the 12 week after switching the JAKi. This figure is proportion of patients reaching the specified disease activity status after switching, according to composite measures. (A:DAS28-CRP, B:SDAI, C:CDAI)

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2022-eular.1785

AB0398

AURICULAR TRANSCUTANEOUS HI-FREQUENCY E-MMUNOTHERAPY SEQUENCES (ATHENS) FOR THE TREATMENT OF RHEUMATOID ARTHRITIS: 1-YEAR CHANGES IN SYNOVITIS, OSTEITIS, AND BONE EROSION

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