(KP) can improve health-related quality of life. In the Netherlands, the incidence of KPs and KP revisions has increased, but health care costs related to these procedures over time and their determinants are unknown.¹

Objectives: To provide estimates of age and sex-specific incidence of KPs, revision KPs, and prosthesis complications in patients with knee OA. To determine average annual health care costs of patients undergoing KP compared with matched controls in the Netherlands, and to understand drivers of costs.

Methods: All KPs in knee OA patients in the Achmea Health Database were identified and matched by age, sex, and region to a maximum of four controls. Incidence rates of KPs, KP revisions, and their complications (/1000 persons) from 2006–2013 were determined. Annual health care cost and excess costs compared to matched controls, preceding, during and after surgery were calculated and associated factors evaluated using longitudinal regression analysis.

Results: The incidence of KPs, KP revisions, and complications increased between 2006 and 2013. This increase was strongest in younger age categories and in men (Table 1). Annual health care costs slightly increased up to the year of surgery, with highest costs in the year of surgery. Post-surgery costs remained slightly higher than pre-surgery costs. High post-surgery costs were mainly associated with subsequent KPs. Other factors associated with high excess costs were younger age, female gender, and complications.

Table 1. Sex-specific incidence rates (per 1,000 person years) of all KPs, KP revisions, and complications associated with knee OA

	2006 IR	2007 IR	2008 IR	2009 IR	2010 IR	2011 IR	2012 IR	2013 IR
All KPs								
Male	0.81	0.86	1.04	1.04	1.11	1.19	1.26	1.26
Female	2.01	1.96	2.08	2.09	2.09	2.23	2.20	2.37
Total	2.82	2.82	3.12	3.13	3.20	3.42	3.46	3.62
KP revisions								
Male	0.04	0.06	0.08	0.07	0.07	0.07	0.12	0.10
Female	0.12	0.10	0.13	0.12	0.14	0.18	0.17	0.21
Total	0.16	0.16	0.21	0.20	0.22	0.26	0.29	0.31
Complications								
Male	0.11	0.13	0.16	0.15	0.19	0.20	0.24	0.27
Female	0.23	0.28	0.33	0.36	0.40	0.42	0.52	0.53
Total	0.34	0.41	0.49	0.52	0.59	0.62	0.76	0.80

Abbreviations: KP = Knee prosthesis, OA = Osteoarthritis, IR = Incidence rate.

Conclusions: These results underscore the increasing burden associated with severe knee OA, especially in younger age categories. Improved guidelines aimed at avoiding complications and revisions are required to counteract this trend.

References:

[1] Dutch Arthroplasty Register (LROI). Arthroplasty in the Picture, Annual Report of the Dutch Arthroplasty Register. 2014.

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THU0604 THE ASSESSMENT OF THE DUTCH QUALITY REGISTRY RHEUMATOID ARTHRITIS QUALITY INDICATORS IN THREE PILOT HOSPITALS

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Background: While practical guidelines and recommendations play an important role in the treatment of RA, rheumatologists often tend to deviate from these guidelines (1). This may result in disparity of quality of care among individual doctors and hospitals. To establish the best possible care, quality measures are needed. These aim to quantify the quality of the delivered care and will form the foundation of quality registries. Standardization of care processes in combination with public reporting of performance (by means of a quality registry) has been suggested to improve quality of care (2).

Objectives: To develop feasible quality indicators (QIs), endorsed by the different stakeholders of the Dutch Quality registry Rheumatoid Arthritis (DQRA).

Methods: An expert group of 8 rheumatologists, 2 patient representatives and 1 healthcare insurer representative developed a minimal set of QIs via a Delphi-like procedure (3), endorsed by the Dutch Society for Rheumatology. Since October 2015, these QIs have been registered by rheumatologists and rheumatology nurses, once a year in 26 hospitals, along with a patient evaluation questionnaire regarding the received care. To determine whether it is feasible to collect these QIs in daily practice, retrospective data from three hospitals was obtained (hospital A (university), B and C (non-academic)).

Feasibility was determined by evaluation of:

1. Completeness of registered data (figure 1)
2. Possibility to calculate disease activity categories (remission, low-high disease activity)
3. Possibility to calculate changes over time in disease activity categories
4. Extraction of data regarding (b)DMARD use

Results: Selected QIs are:

1. Percentage of patients in a certain disease activity category

2. Percentage of patients using a certain (b)DMARD

3. Patient reported experience with received care

Hospital B provided only data from one year (2014) and was not able to extract data on medication from their electronic record system.

Table 1. Assessment of feasibility of the DQRA QIs

Disease activity category				
Indicator (DAS28)	Hospital A (n=791)	Hospital B (n=1395)	Hospital C (n=822)	Mean
Remission	43.6%	45.1%	63.6%	50.8%
Low disease activity	16.3%	15.2%	14.1%	15.2%
Moderate disease activity	32.8%	30.1%	19.1%	27.3%
High disease activity	7.3%	9.6%	3.2%	6.7%
Changes over time in disease activity categories (2014–2015)				
Indicator (DAS28)	Hospital A (n=415)	Hospital B	Hospital C (n=653)	Mean
Stable over time	48.7%	N.A.	58.8%	53.8%
Decreased in disease activity category	24.8%	N.A.	17.9%	21.4%
Increased in disease activity category	26.5%	N.A.	23.3%	24.9%
DMARD use				
Indicator	Hospital A (n=1081)	Hospital B	Hospital C (n=1105)	Mean
sDMARD monotherapy	41.2%	N.A.	51.6%	46.4%
sDMARD combination therapy	29.4%	N.A.	27.8%	28.6%
bDMARD	29.4%	N.A.	16.0%	22.7%
No DMARDs	0%	N.A.	4.7%	0%

Figure 1: completeness of registered data

Conclusions: The DQRA is the first to incorporate perspectives from three stakeholders (patients, physicians and healthcare insurers) and successfully formed a limited set of QI. Collection of these indicators was feasible in two out of the three participating hospitals and offers insight in differences in provided and perceived care for RA patients.

References:

[1] Mahmood et al. Best Pract Res Clin Rheumatol 2015.

[2] Chassin et al. Health Aff 2002.

[3] Mahmood et al. ARD 2016.

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THU0605 IMPACT OF NON-PERSISTENCE TO SUBCUTANEOUS TNF-ALPHA INHIBITORS ON MEDICAL RESOURCE UTILIZATION AND COSTS

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Background: Biotherapies such as subcutaneous tumour necrosis factor-alpha inhibitors (SC-TNFis) have transformed the management of rheumatoid diseases. The assessment of SC-TNFis non-persistence and its impact on medical resource utilization and costs are needed.

Objectives: The objective was to assess the impact of non-persistence to subcutaneous TNF-alpha inhibitors on medical resource utilization and costs, for patients initiating treatment with an SC-TNFi in France.

Methods: The Système National d'Information Inter-régime [French national health insurance scheme information-sharing system] (SNIIRAM) database lists all outpatient and inpatient healthcare consumption for individuals covered by the general health insurance scheme. Using French claims data, conditions were diagnosed using Long Term Disease status and hospital admission, based on ICD-10 codes of rheumatoid arthritis, psoriatic arthritis and ankylosing spondylitis. Patients were then identified through first-line prescription filled for adalimumab (ADA), etanercept (ETA), certolizumab pegol (CZP) and golimumab (GLM) between 2012/07/01 and 2012/12/31. 12-months persistence status was

Abstract THU0605 – Table 1. Comparison of overall costs between persistent and non-persistent patients (n=1,575)

	Mean cost/patient (SD)			P-value
	Persistent	Non-persistent	Difference (persistent – Non persistent)	
Drugs costs	10,726.29 (6,285.74)	7,443.47 (10,199.31)	3,282.82 (-3,913.57)	<0.0001
Biotherapies	9,520.45 (3,601.16)	3,807.88 (4,887.48)	5,712.57 (-1,286.32)	<0.0001
Others	1,205.84 (5,596.59)	3,635.59 (9,818.49)	-2,429.75 (-4,221.89)	<0.0001
Non-drugs costs	3,066.42 (4,765.38)	4,658.24 (6,330.43)	-1,591.81 (-1,565.04)	<0.0001
Including sick leave compensations	525.00 (2,029.22)	1,162.55 (3,309.37)	-637.55 (-1,280.15)	<0.0001
Hospital admissions	1,234.64 (3,957.32)	3,712.15 (7,124.84)	-2,477.50 (-3,167.52)	<0.0001
Total cost	15,027.36 (10,268.24)	15,813.86 (16,976.21)	-786.50 (-6,707.97)	0.0495

estimated with Kaplan Meier analysis. A patient was considered as non-persistent in the event of a prolonged interruption of the therapy during 91 days or more. Persistent and non-persistent patients were compared, after a 1:1 propensity score matching, in term of medical resource utilization and costs (from a National Health Service perspective) in the subsequent 12-month period.

Results: Among 3,804 patients initiating treatment with an SC-TNFI in France between 2012/07/01 and 2012/12/31, 2,133 were classified as persistent at 12 months and 1,671 as non-persistent. After the 1:1 propensity score matching, 1,575 patients were studied in each group. Persistent patients had a lower overall cost than non-persistent patients (-787€): persistent patients had higher costs for drugs (+3,283€), due to the cost of biotherapies, but had lower costs associated to non-drugs (-1,592€) and hospital admissions (-2,478€).

Conclusions: The results indicate that persistence to treatment with SC-TNFI may be associated with cost offsets in terms of non-biologic costs, particularly for hospital admissions. However, as always the case with observational data, residual confounding factors could explain part of the results (e.g. disease severity).

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THU0606 COGNITIVE DYSFUNCTION IN CONNECTIVE TISSUE DISEASES

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Background: Several studies documented the presence of cognitive dysfunction in different rheumatologic autoimmune diseases, but the absence of standard criteria of diagnostic and of an index with patients in which this dysfunction occurs, makes the mentioned studies often lead to divergent conclusions.

Objectives: To evaluate the impact of four autoimmune diseases: Systemic Lupus Erythematosus (SLE), Rheumatoid Arthritis (RA), Systemic Sclerosis (SSc) and Ankylosing Spondylitis (AS) on patient cognition and to identify potential factors which lead to cognitive dysfunction occurrence in these diseases.

Methods: This is a case-control study that included randomly selected patients with SLE, RA, SSc and AS from a University hospital and a matched control group. Data collected included: demographics, patients' education and specific data related to disease (duration, activity scores: DAS284v for RA patients, BASDAI in patients with AS, SLICC/SLEDAI for SLE patients and EUSTAR score/Rodnan score for SSc patients, damage indexes, organ involvement, treatment) and comorbidities. Cognition was assessed using MoCA Test (Montreal Cognitive Assessment The Test). The data were then processed using SPSS 23 version software.

Results: The study group included 255 patients: 58 RA patients, 52 SLE, 70 SSc and 25 AS patients and 50 healthy matched controls.

In all groups of patients, cognitive dysfunction prevalence was higher than control group (RA-64.98%, SLE -57.69%, SS -44.29%, AS -35.72% vs. 24% in the control group).

The differences were statistically significant for the RA group (p=0.00), the SLE group (p=0.001), and the SS group (p=0.001).

For the RA group none of the items analyzed (demographics, disease characteristic, patient' education) showed a significant correlation with cognitive dysfunction. The same lack of correlation was also noted in AS and SSc patients. For the SLE group the only variable analyzed with a significant impact statistically was the SLEDAI score over 12 (p=0.002).

Also, this study did not find a significant statistically association between the presence of antiphospholipid syndrome.

Cognitive dysfunction seems to be more frequent and severe in RA and SLE patients compared to AS patients (p=0.014, respectively p=0.05).

Conclusions: The results obtained in this study show that, indeed, cognitive dysfunction is an issue to be watched very carefully in patients with autoimmune

diseases. The appearance of cognitive dysfunction has a negative impact on life quality of these patients, the pathophysiological mechanisms that contribute to it's appearance are intricate and difficult to isolate.

References:

- [1] Sabbadini MG, Manfredi AA, Bozzolo E, et al. Central nervous system involvement in systemic lupus erythematosus patients without overt neuropsychiatric manifestations. *Lupus* 1999; 8: 11–19.
- [2] L. Groseanu, T. Gudu, R. Ionescu. Significance of cognitive impairment in systemic sclerosis. *Ann Rheum Dis* 2016;75(Suppl2): 526.
- [3] Appenzeller S, Bertolo MB, Costallat LT. Cognitive impairment in rheumatoid arthritis. *Methods Find Exp Clin Pharmacol* 2004;26:339–43.

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THU0607 RISK FACTORS FOR EARLY RETIREMENT IN SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is a connective tissue disease characterized by skin and internal organs fibrosis, microvascular impairment and frequently by disability and early retirement.

Objectives: To assess employment status, risk factors for early retirement (ER) and the associations of ER with disease characteristics and with patients' health-related questionnaires (Scleroderma Health Assessment Questionnaire (SHAQ)) and hand function (Durooz hand index (DHI)).

Methods: This study included patients with SSc according to the 2013 ACR/EULAR classification criteria, examined in our EUSTAR center from 11.2011 to 11.2016, who were under the legal age of retirement in our country (62 years). Patients completed a work assessment questionnaire, the DHI and the SHAQ, as well as a full assessment as per the recommendations of EUSTAR.

Logistic regression was used to investigate the associations between employment status (outcome) and potential predictors (including socio-economic status, education, disease characteristics and health-related questionnaires).

Results: There were 66 patients (8 males, mean±SD age 49.1±9.3 years, 19 with diffuse cutaneous SSc (dcSSc), 46 with history of digital ulcers (DUs) and 23 with joint contractures) included. Forty-two patients lived in urban environments and 42 had higher education (high school or above).

Twenty patients were active professionally, whereas 46 were retired, of which 32 retired because of SSc. Of those active professionally, 8 had to do manual labor, 7 had to spend many hours at work standing and 3 had a cold or moist work environment.

Using logistic regression adjusted for age and gender, higher education was found to be highly associated with employment (OR (95% CI) 9.0 (1.5, 52.4)), whereas labor conditions (manual labor, stress) had no significant influence on employment status in our cohort. No association was found between employment status and disease characteristics or SHAQ and DHI questionnaires.

Conclusions: SSc is associated with substantial work disability and unemployment. Completing less education than high school was associated with early retirement.

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THU0608 ASSOCIATION BETWEEN ALLOPURINOL DOSE-TITRATION AND SERUM URIC ACID LEVELS IN GOUT PATIENTS: US ELECTRONIC HEALTH RECORD DATA

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Background: Allopurinol is a first-line urate lowering therapy for patients with gout. The American College of Rheumatology guidelines recommend allopurinol dose-titration to maintain serum uric acid (sUA) levels <6 mg/dl.