[3] Lie Fong S, Visser JA, Welt CK, et al. Serum anti-mullerian hormone levels in healthy females: a nomogram ranging from infancy to adulthood. J Clin Endocrinol Metab 2012;97:4650–5.

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FRI0137 PRESENCE OF THYROID DISEASE IN RHEUMATOID ARTHRITIS PATIENTS IS PREDICTOR OF WORSE INITIAL TREATMENT RESPONSE: AN OBSERVATIONAL, COHORT STUDY

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Background: Rheumatoid Arthritis (RA) should be treated instantly to prevent further joint destruction. The first few months after treatment initiation are critical for long-term treatment outcome.[1]Patients with RA are at increased risk of thyroid disease with direct effect on initial treatment response.[2]

Objectives: To define the prevalence of thyroid disease among RA patients as well as to evaluate the correlation between presence of thyroid disease in RA patients and initial treatment response.

Methods: All RA patients who were registered in the local part of Danish Danbio registry were included in this study. Patients' demographic data, serology results including rheumatoid factor (RF) and anti-cyclic citrullinated peptide antibody (anti-ccp) as well as disease activity score in 28 joints-C-reactive protein (DAS28-CRP) at the time of diagnosis and after 4 months (±1–2 months) of treatment initiation were extracted. ∆DAS28 was calculated as follows: DAS28 at the time of diagnosis – DAS28 after 4 months (±1–2 months) of treatment initiation. Patients' electronic hospital records including laboratory results were reviewed to reveal if they had been diagnosed with thyroid disease.

Results: 1035 patients were included in the study (Table 1). Prevalence of thyroid disease was 11.8% (122/1035). Multiple linear regression analysis showed a negative correlation between ∆DAS28 and presence of thyroid disease adjusted for age, gender, disease duration, RF, anti-ccp and DAS28 at the time of diagnosis (Regression coefficient (95% Confidence Interval): -0,157 (-0.312 to -0.002), P=0.047) (Table 2). RA patients with thyroid disease had significantly poorer initial response to RA treatment compared to patients with isolated RA after 4 months of treatment (P=0.002).

Table 1. Demographic and disease characteristics of the included (N=1035) patients

Age (years), Mean ± SD:	67,1±14,5
Gender (%) Female	656 (63.4%)
DAS28 at time of diagnosis, Mean ± SD:	4.5±0.9
DAS28 after 4 months of treatment, Mean ± SD:	3.1±0.8
∆DAS28, Mean ± SD:	1.4±1.0
IgM Rheumatoid Factor (%) Positive	607 (58.6%)
Anti-ccp (%) Positive	532 (51.4%)

Table 2. Results of Multiple linear regression analysis

Variables	Coefficient	t-stat	Confidence Interval		P value
			Lower 95%	Upper 95%	
Age	0,002	1.427	-0.001	0.006	0.154
Male gender	0,056	1.051	-0.049	0.161	0.293
disease duration	-0,003	-1.093	-0.009	0.002	0.275
Rheumatoid Factor positivity	0,010	0.159	-0.118	0.139	0.873
Anti-ccp positivity	-0,030	-0.456	-0.158	0.098	0.649
DAS28 at diagnosis	0,717	26.173	0.664	0.771	>0.001
Presence of Thyroid Disease	-0,157	-1.988	-0.312	-0.002	0.047

Conclusions: Presence of thyroid disease in RA patients worsens initial treatment response and is suggestive of poor long-term prognosis. The authors propose routine measurement of serum thyroid stimulating hormone (TSH) in all RA patients at the time of diagnosis and with yearly interval.

References:

[1] Smolen JS, Aletaha D, McInnes IB. Rheumatoid arthritis. Lancet 2016; 388:2023–2038. doi: 10.1016/S0140–6736(16)30173–8.
[2] Joshi P, Agarwal A, Vyas S, et al. Prevalence of hypothyroidism in rheumatoid arthritis and its correlation with disease activity. Trop Doct 2017;47:6–10.

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FRI0138 LUNG INVOLVEMENT IN RHEUMATOID ARTHRITIS – A PORTUGUESE REALITY

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Background: Rheumatoid arthritis (RA) is associated with a wide range of extra-articular manifestations. Non-cardiac thoracic manifestations occur in approximately 5–20% and can affect the pleura, pulmonary parenchyma, airways and vasculature[1]. Besides, patients can also experience drug-induced pulmonary disease related to RA medication[2].

Objectives: To characterize lung involvement and factors associated with lung disease in a cohort of RA patients.

Methods: Retrospective analysis of RA patients followed in our Rheumatology department. Lung involvement was defined by the presence of imagiological/histopathological alterations described in the spectrum of rheumatoid arthritis-associated lung disease in either symptomatic or asymptomatic patients. Logistic regression analysis was used to evaluate demographic and clinical features independently associated with lung disease.

Results: In total, 532 RA patients were analysed, 400 females, mean age of 63.6 (±13.8) years and mean disease duration of 11.8 (±9.5) years. Rheumatoid factor (RF) was positive in 69% and anti-cyclic citrullinated peptide antibodies (ACPA) in 60%; 8.8% were current smokers and 7.5% past smokers. Methotrexate (MTX) was the most prescribed synthetic DMARD (85.9%) and biologics were used in 32.3% of patients.

Lung involvement was documented in 38 patients (7.1%; 95% CI 5.2%>9.7%). The specific types of lung disease are presented in figure 1. The mean interval between articular and pulmonary symptoms was 6.1 (±6.4) years, with only 1 patient having lung involvement diagnosed prior to joint manifestations. Most patients were female (73.7%), 78.9% RF positive, 68.4% ACPA positive and 29% current/previous smokers. Secondary Sjögren's Syndrome was present in 5 patients. Eighteen (47%) patients were medicated with MTX, 16 of them initiated therapy before developing respiratory symptoms and 10 (26.5%) with biologics (4 with TNF antagonists, 3 with tocilizumab, 2 with rituximab and 1 with abatacept). Most patients (92.1%) had abnormal chest x-rays, but only 47.4% were symptomatic. Pulmonary function tests (PFT) were abnormal in 31.6% of patients and 47.4% had diffusing capacity for carbon monoxide (DLCO) less than 75% predicted (7 had no DLCO estimated). Respiratory insufficiency was present in 7 (18.4%) patients. In multivariate logistic regression analysis, current MTX use (OR: 2.1 [1.02–4.33]), RF positivity (OR: 3.48 [1.18–10.25]) and older age (OR: 1.03 [1.00–1.06)] were independently associated with lung involvement.

Type of lung involvement	**UIP** (n=10)	**NSIP** (n=8)	**Bronchiectasis** (n=16)	**Follicular bronchiolitis** (n=1)	**Pleural involvement** (n=3)
Female	7	6	14	1	0
RF positive	8	7 (1 missing)	12 (1 missing)	1	2 (1 missing)
Smoking	4 (1 missing)	3	3	0	1
PFT	4 normal	5 normal	9 normal	1 normal	3 normal
	3 restrictive	1 restrictive	4 restrictive		
	1 obstructive	1 restrictive + obstructive	2 obstructive		
DLCO < 75%	7	3 (2 missing)	7 (3 missing)	0	2

UIP – usual interstitial pneumonia; NSIP – nonspecific interstitial pneumonia

Figure 1 – Specific types of lung involvement and its characteristics

Conclusions: Lung involvement was present in 7.3% of our cohort and was diagnosed in average 6.1 years after the first joint manifestations. RF positivity, older age and current MTX use are associated with lung disease.

As most patients remain asymptomatic, lung involvement is probably under-diagnosed in RA patients. Besides, in clinical practice exams that can detect preclinical disease, such as high-resolution chest computed tomography, are usually reserved for symptomatic patients or with an abnormal chest x-ray.

References:

[1] Chansakul T, Dellaripa, Doyle TJ, Madan R. Intra-thoracic rheumatoid arthritis: imaging spectrum and treatment related complications. Eur J Radiol. 2015 October; 84(10): 1981–1991.
[2] Megan Shaw, Bridget F. Collins, Lawrence A. Ho and Ganesh Raghu. Rheumatoid arthritis-associated lung disease. Eur Respir Rev 2015; 24: 1–16.

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FRI0139 PREVALENCE OF HYPERPARATHYROIDISM IS HIGHER AMONG RHEUMATOID ARTHRITIS PATIENTS COMPARED TO THE GENERAL POPULATION: AN OBSERVATIONAL, COHORT STUDY

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Background: Patients with Rheumatoid Arthritis (RA) are at increased risk of different comorbidities which may affect long-term prognosis.[1] Primary hyperparathyroidism (PHP) is a metabolic disorder of one or more of the parathyroid glands with a prevalence of 1–7 per 1000 adults.[2]

Objectives: To define the prevalence of PHP in patients with RA.
Methods: All RA patients who were registered in the local part of Danish Danbio registry were included in this study. Patients'demographic data and serology results (rheumatoid factor (RF) and anti-cyclic citrullinated peptide antibody (anti-ccp)) were extracted from Danbio. Patients' electronic hospital records including laboratory results (Parathyroid hormone (PTH) and calcium levels) were reviewed to reveal if they had been diagnosed with PHP as well.
Results: 1035 RA patients were included in this study [table 1]. Prevalence of PHP was 2.8% (29/1035). RA Patients with PHP had significant longer disease duration compared to patients with isolated RA (p=0.003). There was no significant difference between RA patients with and without PHP with respect to age, gender, RF and anti-ccp positivity (Table 1).

Table 1. Association of PHP with age, gender, disease duration, Rheumatoid Factor and Anti-ccp in RA patients

Variables:	RA patients with PHP N=29	RA patients without PHP N=1006	P value
Age	69.9±10.6	67.0±14.6	0.170
Gender, Female	23 (79.3%)	633 (62.9%)	0.107
Disease Duration	15.2±9.5	9.4±9.6	0.003
Rheumatoid Factor, Positive	20 (69%)	587 (58.3%)	0.393
Anti-ccp, Positive	19 (65.6%)	513 (51%)	0.241

RA: Rheumatoid Arthritis, PHP: Primary Hyperparathyroidism.

Conclusions: Clinicians should pay special attention to higher prevalence of PHP among RA patients compared to the general population. Presence of PHP in RA patients may aggravate the effect of RA on bones and joints by means of interaction with cytokines and inflammatory markers involved in RA. Concurrent PHP can be diagnosed at early stage by testing PTH and calcium levels which minimize the future morbidities e.g. fracture due to osteoporosis.

References:
[1] Dougados M, Soubrier M, Antunez A, et al. Prevalence of comorbidities in rheumatoid arthritis and evaluation of their monitoring: results of an international, cross-sectional study (COMORA). Ann Rheum Dis 2014;73:62–8.
[2] Yeh MW, Ituarte PH, Zhou HC, et al. Incidence and prevalence of primary hyperparathyroidism in a racially mixed population. J Clin Endocrinol Metab 2013;98:1122–9.

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FRI0140 COMORBIDITY AND SURGERY HISTORY OF RHEUMATOID ARTHRITIS PATIENTS WHO ARE RECEIVING BIOLOGICAL AGENT

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Background: Rheumatoid artritis (RA) is a chronic and autoimmune disorder that primarily affects middle and older ages. Comorbidities are important during RA treatment.
Objectives: We aim to determine the frequency of comorbidites and surgical history in the RA patients who receive biological agents.
Methods: Hacettepe University Biologic Registry (HUR-BIO) includes demographic and clinical data of patients treated with biological agent since 2005. By August 2016, 1235 RA patients were recorded in the database. Age, gender, smoking habits, disease duration, rheumatoid factor, anti citrullinated peptide (CCP), C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), current and previous treatments, comorbidites and surgical history of patients were analyzed. Comorbidites and surgery history were determined by patients medical records. Disease activity was estimated by the 28-joint activity calculator- C reactive protein (DAS28-CRP). Functional assessment was evaluated by the Health Assessment Questionnaire (HAQ).
Results: Mean age (SD) of the patients (79,8% women) was 53,1 (12,6) and the mean disease duration was 11,0 (7,7) years. Of patients, 166 (16,6%) were older than 65 years. A total of 630 (63%) patients education level were less than high school, 197 (19,7%) of the patients were graduated from university. Smoking habitus of patients was as follows, 599 (59,9%) never smoked, 189 (18,9%) current smoker and 212 (21,2%) ex-smoker. At least one cardiovascular risk factor was detected in 699 (69,9%) patients. Comorbidities and surgical history of patients were shown in the table below. Patients with at least one comorbidity had less frequently female (77.3% vs 84.5%, p=0.007), high seropositivitly of RF (66% vs 57.1%, p=0.004), high patient global assessment (4.4±2.5 vs 3.9±3.9, p=0.007), high fatique score (4.6±3 vs 3.9±3.1, p=0.001), high pain score (4.8±2.5 vs 4.0±2.8, p=0.009), DAS-28 (3.43±1.39 vs 3.17±1.48, p=0,009) and high HAQ score (0.72±0.59 vs 0.58±0.54, p=0.001) than patients without comorbidities.
Conclusions: Comorbidities and past surgical history should be considered in RA patients when biological therapy is indicated. Comorbidities is one of the important conditions for physicians to manage patients. Cardiovascular, chronic viral infection such as hepatitis B and C, tuberculosis and cancer have to be investigated to start biological treatments. Surgical history such as cataracts, ortopedic surgery were also important for clinicians. HURBIO data demonstrated that patients with at least one comorbidities reflects more negative patient outcome measures.

Table: Comorbidity and surgery details in RA patients

	Female	Male	Total	p
Comorbidity				
Obesity (BMI >30)	382 (46,3)	64 (32,2)	446 (44,6)	0,00
Hypertension	268 (33,6)	41 (20,3)	309 (30,9)	0,00
Diabetes mellitus	93 (11,7)	15 (7,4)	108 (10,8)	0,004
Thyroid disease	129 (16,2)	8 (4)	137 (13,7)	0,000
Asthma	35 (4,4)	11 (5,4)	46 (4,6)	0,525
CVA	4 (0,5)	0 (0)	4 (0,4)	0,313
Amyloidosis	5 (0,6)	2 (1)	7 (0,7)	0,598
Tuberculosis history	19 (2,4)	10 (5,0)	29 (2,9)	0,052
Hepatit B	17 (2,1)	7 (3,5)	24 (2,4)	0,115
Hepatit C	18 (2,3)	6 (3)	24 (2,4)	0,335
Cancer	23 (2,9)	6 (3)	29 (2,9)	0,947
Surgery history				
Spinal surgery	79 (9,9)	8 (4)	87 (8,7)	0,007
Orthopedic extremity surgery	72 (9)	18 (8,9)	90 (9)	0,968
Knee prosthesis	58 (7,3)	5 (2,5)	63 (6,3)	0,14
Hip prosthesis	35 (4,4)	10 (5)	45 (4,5)	0,695
CTS surgery	30 (3,8)	2 (1)	32 (3,2)	0,046
Cholecystectomy	72 (9)	7 (3,5)	79 (7,9)	0,009
Appendectomy	75 (9,5)	10 (5,0)	85 (8,5)	0,037
Hernia repair	25 (3,1)	15 (7,4)	40 (4,0)	0,005
GIS surgery	31 (3,9)	12 (5,9)	43 (4,3)	0,198
Cataract	64 (8)	15 (7,4)	79 (7,9)	0,798
Gynecologic surgery	127 (15,9)	-	127 (12,7)	
Breast surgery	16 (2)	0 (0)	16 (1,6)	0,042
Thyroid surgery	57 (7,1)	3 (1,5)	60 (6,0)	0,002
ENT surgery	61 (7,6)	16 (7,9)	77 (7,7)	0,895
Urological surgery	70 (8,8)	16 (7,9)	86 (8,6)	0,00
Pulmonary surgery	8 (1,0)	6 (3)	[illegible]	0,00
Cardiovascular surgery	23 (2,9)	[illegible]	33 (3,3)	0,438

CVA, Cerebrovascular diseases, CTS, Carpal tunnel syndrome, GIS, Gastrointestinal surgery, ENT, Ear, nose and throat

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FRI0141 LEFT VENTRICULAR CONCENTRIC REMODELING IS MORE PREVALENT IN RHEUMATOID ARTHRITIS: A CASE-CONTROL STUDY

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Background: Patients with rheumatoid arthritis (RA) have a higher risk to develop cardiovascular complications than general population (1), leading to a decrease in life expectancy of 3 to 10 years (2). RA is associated to increased left ventricle mass, pericardial effusion and diastolic dysfunction (3).
Objectives: The aim of this study was to assess the structure and function of the left ventricle in patients with RA and compare the results with matched controls.
Methods: We designed an observational cross-section case-control study. Patients diagnosed with RA according to the 1987 ACR and/or 2010 ACR/EULAR classification criteria, 40–75 years old, with no overlap syndromes, atherosclerotic cardiovascular disease or hypertension were included. Subjects for the control group were matched by sex, age and comorbidities. A board-certified cardiologist performed a transthoracic echocardiogram.
Results: We included a total of 44 RA-patients and 26 control subjects. Table 1 summarizes the demographic characteristics for each group. Left ventricular concentric remodeling (LVCR), defined as a relative wall thickness (RWT) >0.42 cm and a left ventricular mass index (LVMI) ≤ 95 gm/m^2 in women and ≤ 115 gm/m^2 in men, was found in 14 patients (32.6%) of the RA-group and 2 subjects (8%) of the control group; this difference was statistically significant (p=0.021).
When we analyzed general abnormalities of left ventricle (either LVCR or left ventricular concentric hypertrophy [RWT >0.42 cm and LVMI >95 gm/m^2 in women, >115 gm/m^2 in men]) we found 15 RA patients (34.1%) with abnormalities and 3 subjects in the control group (11.5%) (p=0.037). There were no statistically significant differences among the groups in LVMI, diastolic dysfunction, global longitudinal strain or ejection fraction.

Table 1. Demographic characteristics

	RA group (n=44)	Control group (n=26)	*p*
Age, mean ± SD	52.35±7.34	53.94±6.81	0.371
Disease duration (years), mean ± SD	10.682±8.3321	–	–
DAS-28 CRP, mean ± SD	3.36±1.42	–	–
Women, n (%)	43 (97.7)	24 (92.3)	0.279
Body Mass Index, mean ± SD	26.98±6.13	28.3±4.12	0.956
Active smoking, n (%)	4 (9.1)	0 (0)	0.113
Type 2 Diabetes mellitus, n (%)	2 (4.5)	2 (7.7)	0.584

DAS-28 CRP - Disease activity score 28 using C-reactive protein.

Conclusions: Left ventricle concentric remodeling is more prevalent in RA-patients when compared to controls. Further research is needed to determine the impact of these findings in the clinical prognosis of RA-patients.

References:
[1] Solomon DH, Curhan GC, Rimm EB, Cannuscio CC, Karlson EW. Cardiovas-