The prevalence of **AAa** and of distinctly different forms of multifocal inflammation, such as purulent bronchitis and bronchiolitis (**purBr**) or bronchopneumonia (**BrPn**), infarct with pneumonia (**InfPn**), occlusive pneumonia (**OcclPn** – focal pneumonia caused by compressive peribronchial nodular lymphoid hyperplasia or bronchial blockage by a necrotic nodule) were examined. In addition, rheumatoid pneumonia (**RhPn**), furthermore interstitial pneumonia (**IPn**) [1-4] were determined at autopsy and confirmed in a detailed review of extensive histological material.

The possible role of **AAa** on the prevalence of **purBr** or **BrPn**, **InfPn**, **OcclPn**, **RhPn** and **IPn** was analyzed with Pearson's chi-squared (χ^2) test.

Results: **AAa** complicated **RA** in **34 (23.13%)** of 147 patients. Pulmonary blood vessels of different caliber and various tissue structures of the lungs were involved in **25 (73.53%)** of 34 cases; the lungs were not involved by **AAa** in **9 (26.47%)** of 34 cases.

purBr or **BrPn** were associated with **RA** in **19 (21.1%)**, **InfPn** in **5 (3.4%)**, **OcclPn** in **2 (1.4%)**, **RhPn** in **3 (2.1%)** of 147 patients (only the fatal cases were considered). **IPn** – characterized by interstitial cellular infiltration with or without edema, fibrinoid deposition, with or without fibrosis, and with or without corresponding pleuritis was present in **35 (23.8%)** of 147 patients; **IPn** alone was not fatal in our cohort and contributed to the death only in association with cardiac, circulatory or cardio-respiratory insufficiency.

Pulmonary amyloid A deposition (**n=25**) was associated with **purBr** or **BrPn** in **1 (5.26%)** of 19, **InfPn** in **1 (20.0%)** of 5, **OcclPn** in **2 (100.0%)** of 2, **RhPn** in **none (0.0%)** of 3, **IPn** in **12 (34.29%)** of 35 patients.

The relationship between pulmonary **AAa** and **purBr** or **BrPn** ($\chi^2=1.2836$, $p<0.25$), **InfPn** ($\chi^2=0.1800$, $p<0.67$) or **RhPn** ($\chi^2=0.00025$, $p<0.98$) was not significant. There was a **significant and positive correlation** between pulmonary **AAa** and **OcclPn** ($\chi^2=4.8313$, $p<0.02$) or between **AAa** and **IPn** ($\chi^2=9.7106$, $p<0.0018$).

Conclusion: The main complications of **RA**, such as **AAa**, may influence the prevalence, clinical course and symptoms of associated diseases and vice versa. Knowledge of these relationships is important to estimate the relative danger they potentially represent.

The **significant correlation** between **AAa** and **OcclPn** or **IPn** suggests a positive influence of pulmonary amyloid A deposition on **OcclPn** or **IPn**. The statistically not significant correlations suggest that **purBr** or **BrPn**, **InfPn** and **RhPn** are independent entities which are not influenced by **AAa**.

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FR10025

DOES COMORBIDITY IMPACT ON THE ACTIVITY AND MANAGEMENT OF RHEUMATOID ARTHRITIS?

Aida Babaeva¹, Elena Kalinina¹, Maxim Zvonorenko¹, Karina Solodenkova².

¹Volgograd State Medical University, Volgograd, Russian Federation; ²I.M. Sechenov First Moscow State Medical University, Moscow, Russian Federation

Background: Patients with rheumatoid arthritis (RA) are in increased risk of developing comorbid conditions. Recent data suggest the relationship between severity of RA and concomitant diseases [1, 2]. Drug therapy is considered as impotent risk factor for numerous comorbidities. On the other hand comorbidity can impact negatively on the RA course and on the pts management [3].

Objectives: The aim of our study was to evaluate the prevalence of concomitant conditions in RA pts, to compare the RA activity and management in relation with comorbidities.

Methods: 168 pts with established and longstanding RA were observed at in-patient clinic for RA clinical assessment and revealing concomitant diseases (cardiovascular, gastrointestinal, liver, pulmonary, endocrine, blood). The activity of disease according to DAS28-ESR index in RA subgroups with different comorbidities was compared. The spectrum and used doses of anti-rheumatic medications (DMARD, biologics, GC) in these subgroups was analyzed in term to assess the RA rational treatment.

Results: The majority (88.1%) of observed RA pts had concomitant condition. The most frequent associated diseases were: cardiovascular (AH, IHD, HF, AF) in 86.9% and gastrointestinal (gastritis, duodenitis, gastroduodenal ulcer, colitis) in 64.3% less common comorbidities were anemia (30.9%), liver and kidney abnormalities (hepatomegaly, steatohepatitis, CKD, pyelonephritis) in 25% and 12.5% respectively, endocrine (type 2 diabetes mellitus, thyroid disorders) in 16.7%. Multimorbidity determined as combination of different system disorders in the setting of RA was detected in 54.8% of RA pts. We found out significant difference in RA activity on the basis of DAS28 between RA subgroup without concomitant conditions (the 1st) on the one hand and RA subgroups with comorbidities (the 2nd) ($t_1=2.76$, $p<0.01$) or multimorbidities ($t_2=3.73$, $p<0.01$) on the other hand (tab.1).

Index	RA without comorbidities (1 st group)	RA with comorbidities (2 nd group)	RA with multimorbidities (3 ^d group)
DAS 28	4.20 ±0.31	5.09±0.09	5.44±0.12

In RA with comorbidities/multimorbidities the mean doses of MTX and SSZ were lower than in RA without comorbidities, while the dose of GC and frequency of GC use was significantly higher in the 2nd and 3^d groups ($\chi^2=4.25$, 4.41 respectively). 55% of pts from the 1st group and only 19.6% of total amount of pts from the 2nd and 3^d groups were treated with biologics ($\chi^2=5.67$).

Conclusion: Obtained data suggest that comorbidities have a negative impact on the severity of RA and can interfere in the implementation of T2T strategy in daily clinical practice.

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FR10026

SYSTEMIC, RENAL AND CARDIAC AA AMYLOIDOSIS IN RHEUMATOID ARTHRITIS – A COMPARATIVE POSTMORTEM CLINICOPATHOLOGIC STUDY OF 161 PATIENTS

Miklós Bély¹, Ágnes Apáthy². ¹Hospital of the Order of the Brothers Saint John of God in Budapest, Department of Pathology, Budapest, Hungary; ²St. Margaret Clinic, Budapest, Department of Rheumatology, Budapest, Hungary

Objectives: The aim of our study was to determine the incidence of systemic AA amyloidosis (**sAAa**) in **RA**, to appraise the prevalence and severity of amyloid A deposits in different tissue structures of the kidneys and heart, to outline the development of renal and cardiac AA amyloidosis (**rAAa** and **cAAa**), and to estimate the role of **rAAa** and **cAAa** in mortality.

Methods: One hundred sixty one (161) non-selected autopsy patients with rheumatoid arthritis (**RA**) were studied. **RA** was confirmed clinically according to the criteria of the **ACR** [1]. **sAAa** was specified histologically, based on evaluation of 5 organs (heart, lung, liver, kidney and pancreas). Amyloid A deposition was diagnosed histologically according to Romhányi by a modified (more sensitive) Congo red staining [2]. Amyloid

A deposits were confirmed in serial sections by immunohistochemical and histochemical methods.

Results: **sAAa** complicated **RA** in **34 (21.12%)** of 161 patients; in **127 (78.88%)** of 161 patients amyloid A deposits were not found.

Amyloid A deposits were found in **29 (87.88%) kidneys** of 33 patients with **sAAa**; kidneys were negative for amyloid in **4 (12.12%)** of 33 cases (in 1 of 34 patients with **sAAa** tissue blocks of kidneys were not available).

Amyloid A deposits were found in **29 (87.88%) hearts** of 33 with **sAAa**; the heart was negative for amyloid in **4 (12.12%)** of 33 cases (the heart of one patient with **sAAa** was not available).

Renal amyloid A deposition led to death in **17 (50.0% of 34)** patients with **sAAa** due to massive amyloid A deposition in the kidneys, leading to renal insufficiency and uremia. Cardiac amyloid A deposition led to death in **3 (8.82% of 34)** patients with **sAAa** (and contributed to the lethal outcome in further 5). **Forteen (41.18% of 34)** patients with **sAAa** died of other causes such as peritonitis, lethal septic infection, etc.

sAAa was clinically diagnosed in **9 (26.47%)** and missed in **25 (73.52%)** of 34 patients, and only cases with massive renal amyloid A deposits were recognized. Cardiac **AAa** or its pathogenic role in mortality was not diagnosed.

Conclusion: **sAAa** is one of the main and the most insidious complications of **RA** affecting the kidneys and heart with high prevalence and severity. **sAAa** is related to the cardiovascular system, and **rAAa** or **cAAa** are associated with it. **sAAa**, **rAAa** and **cAAa** may developed in both sexes, and at any time in the course of the disease.

Systemic, renal and cardiac amyloid A deposition is a progressive and cumulative process, involving in its early stage only a few structures in some organs, and increasingly more in the later stages of the disease.

In **sAAa** the renal and cardiac amyloid A deposition starts after a latent stage. This latency may be caused by a not specified local protective mechanism, e.g. great excretion capacity of the kidneys, due to motility of the heart or oxygenisation etc.

Amyloid A deposition starts in the most frequently involved structures of the kidneys or heart with more massive deposits. The chronology of amyloid A deposition allows an indirect assessment of the stage of renal or cardiac amyloidosis, which may have a prognostic value in everyday surgical pathology.

Half of the patients with **sAAa** died of uremia caused by massive **rAAa** and only 9 of these were clinically recognized. Renal and cardiac amyloid A deposition should be considered a very serious, life-threatening complication of **RA**.

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FRI0027

PROGNOSTIC MARKERS FOR PRECLINICAL CARDIOVASCULAR DISEASE IN RHEUMATOID ARTHRITIS AND CORRELATION WITH DISEASE ACTIVITY

Annelies Blanken¹, Rabia Agca¹, C.J. van der Laken², Michael Nurmohamed^{1,2}.

¹Amsterdam Rheumatology and immunology Center location Reade, Amsterdam, Netherlands; ²Amsterdam Rheumatology and immunology Center location VUmc, Amsterdam, Netherlands

Background: Patients with rheumatoid arthritis (RA) have an elevated cardiovascular (CV) disease risk, explained both by an increased prevalence of traditional CV risk factors and the presence of chronic systemic inflammation that impairs vascular function, leads to thickening of the arterial wall and increased arterial stiffness.

Objectives: In this study we investigated the effect of anti-inflammatory treatment on prognostic markers for preclinical cardiovascular disease (arterial wall thickening and arterial stiffness) and the correlation of these markers with RA disease parameters.

Methods: Carotid ultrasound (using Artlab echotracking system) was used to determine carotid intima media thickness (IMT) and pulse wave analysis was done with SphygmoCor tonometry to calculate pulse wave velocity (PWV) and augmentation index (AIx). Paired t-test was used to compare PWV, AIx and IMT prior and after 6 months of therapy. Pearson correlation was calculated to investigate the correlation of PWV, AIx and IMT with (natural logarithm of) C-reactive protein (CRP), (natural logarithm of) erythrocyte sedimentation rate (ESR) and disease activity score-28 (DAS28). For correlations, data from both time points were pooled.

Results: In total 61 consecutive RA patients (50% early arthritis starting with csDMARD and 50% established RA starting with adalimumab) were asked to undergo arterial analysis just prior to start of therapy and after 6 months. PWV was performed in 45 patients at baseline and 39 at follow-up, IMT in 56 and 45 patients respectively and AIx in 51 and 44 patients respectively. Both signs of arterial stiffness (PWV and AIx) decreased after 6 months of therapy (mean difference 0.7 and 0.8 respectively; table 1), although this did not reach statistical significance. IMT remained stable during 6 months of therapy.

Table 1. Prognostic markers of atherosclerosis prior and after 6 months of anti-inflammatory therapy

	n	Baseline	6 months	Mean difference (95% CI)
PWV (m/s)	35	8.0	7.3	0.7 (-0.2;1.5)
AIx (%)	39	27.4	26.6	0.8 (-6.4;7.9)
IMT (mm)	43	0.68	0.68	-0.007 (-0.03;0.02)

PWV (n=84) showed a significant correlation with ESR (0.262, p<0.02) and DAS28 (0.269, p<0.02). Both AIx (n=95) and IMT (n=101) showed a significant correlation with CRP (-0.223, p<0.05 and 0.244, p<0.02, respectively). Other correlation coefficients were not statistically significant (data not shown, p>0.05).

Conclusion: Arterial stiffness as measured with PWV tended to decrease after 6 months of anti-inflammatory treatment. Arterial stiffness and arterial intima media thickness correlated with clinical disease parameters. Altogether, these changes might suggest that effective antirheumatic therapy has favorable cardiovascular effects. Whether or not this ultimately leads to a significant reduction of "hard" cardiovascular endpoints remains to be established in prospective studies.

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FRI0028

LOW SERUM IGF1 IS ASSOCIATED WITH AN INCREASED RISK AND HIGH PREVALENCE OF CARDIOVASCULAR EVENTS IN MIDDLE-AGED FEMALE PATIENTS WITH RA – A 5-YEAR FOLLOW-UP

Malin Erlandsson^{1,2}, Rachele Espino¹, Lovisa Lyngfelt¹, Sofia Töyrä Silfverswärd¹, Mitra Nadali^{1,2}, Karin Me Andersson¹, Rille Pullerits^{1,2,3}, Maria I Bokarewa^{1,2}.

¹University of Gothenburg, Dpt of Rheumatology and Inflammation Research, Gothenburg, Sweden; ²Sahlgrenska University Hospital, Rheumatology Unit, Gothenburg, Sweden; ³University of Gothenburg, Dpt of Clinical Immunology and Transfusion Medicine, Gothenburg, Sweden

Background: Recent meta-analysis reported that rheumatoid arthritis (RA) is associated with high frequency of hypertension and stroke (1). IGF1 is an important angioprotector and its deficiency predisposes to development of ischemic stroke (2).

Objectives: Since levels of active IGF1 are affected by systemic inflammation, we analyze if low IGF1 is associated with increased cardiovascular disease (CVD) in women with RA.

Methods: The CVD risk was estimated (eCVR) in 184 female RA patients (median age 53 years, range 21-71) using the Framingham