FRI0538

PREGNANCY IN WOMEN WITH RHEUMATIC DISEASES: MATERNAL AND FETAL COMPLICATIONS

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Background: Most of the rheumatic diseases are more common in women than in men. Because many of these conditions may interact with pregnancy, reproductive issues related to disease management should be discussed with all women with rheumatic diseases who are in reproductive age group. Some rheumatic diseases (i.e. systemic lupus erythematosus (SLE) are associated with flares in pregnancy, while others (i.e. rheumatoid arthritis (RA) have been known to improve or not deteriorate during pregnancy. However, pregnancies in women with rheumatic diseases are still at risk of maternal/fetal complications. Nevertheless, no detailed analysis of pregnancy outcomes in women with various types of systemic connective tissue diseases has been carried out in the recent studies.

Objectives: This study aimed to compare pregnancy outcomes in women with various types of systemic rheumatic disease and analyze influence of clinical features/laboratory parameters on risk of maternal and fetal complications.

Methods: A retrospective single-center cohort study 11/2014-12/2019: 191 pregnancies in 181 patients with proved rheumatic diseases > 20 weeks of gestation, mean age was 31.6 years. Proved SLE was observed in 67 patients, 8 of them had antiphospholipid syndrome (APS) secondary to SLE. 40 patients had proved RA, 24 – vasculitis, 18 – primary Sjögren syndrome (pSS), 30 – seronegative spondyloarthropathies (SpA). Clinical and laboratory parameters, renal function at conception and after delivery and pregnancy outcomes were collected. Preeclampsia (PE) was diagnosed by the 2008 WHO criteria.

Results: Rate of PE was significantly higher in women with SLE and SLE+APS compared to women with RA ($p < 0.05$). We found a threefold increase of PE risk in patients with high activity of the rheumatic disease ($p = 0.001$, OR = 3.4, 95% CI 1.7-6.7) and fivefold increase of PE risk in patients with chronic hypertension ($p = 0.002$, OR = 5.3, 95% CI 1.9-15).

Week of delivery was significantly lower in women with SLE+APS compared to women with RA, vasculitis, systemic sclerosis (SSc), in women with SLE compared to women with SSc and SpA and in women with SSc compared to women with SpA ($p < 0.05$).

Rate of preterm birth was higher in patients with SLE+APS compared to women with SLE, RA and vasculitis, in patients with SLE compared to patients with RA and SpA, in patients with RA compared to patients with vasculitis, SSc and SpA ($p < 0.05$).

Birth weight was significantly higher in babies born to women with SSc compared to newborns to women with SLE, RA, pSS, SpA and SLE+APS and lower in newborns to women with SLE+APS compared to other groups ($p < 0.05$).

Newborns to women with SLE and SLE+APS had lower Apgar scores than newborns to women with SpA. Low GFR ($p = 0.004$, OR = 1.03), high urea ($p < 0.001$, OR = 1.5, 95% CI 1.2-1.8), creatinine ($p = 0.005$, OR = 1.02, 95% CI 1.1-1.04) and LDH concentrations ($p = 0.009$, OR = 1.01, 95% CI 1.1-1.02) in 3rd trimester increased the risk of low Apgar scores of a newborn ($p < 0.05$).

Conclusion: Patients with SLE with/without secondary APS have significantly increased rates of preeclampsia, preterm birth and lower Apgar scores. Risk of adverse pregnancy outcomes can be significantly reduced by good disease control.

Table 1. Comparison of the pregnancy outcomes in women with various rheumatic diseases

	SLE (*) n = 67	RA (#) n = 40	Vasculitis (\$) n = 24	pSS (%) n = 18	SSc (&) n = 12	SpA (^) n = 30	SLE + APS n = 8
Age, M ± SD	31 ± 4	32 ± 5	30 ± 7	32 ± 5	32 ± 5	33 ± 6	32 ± 4
Preterm birth, n (%)	25 (37.3%) ^{&^}	9 (22.5%) ^{S&^}	2 (8.3%)	6 (33.3%)	1 (8.3%)	2 (6.7%)	5 (62.5%) ^{*S&}
Preeclampsia n (%)	13 [*] (19.4%)	0	1 (4.2%)	0	3 (25%)	2 (6.7%)	3 [#] (37.5%)
Low Apgar score n (%)	14 [^] (21%)	4 (10%)	2 (8.3%)	4 (22.2%)	1 (8.3%)	2 (6.7%)	3 [^] (37.5%)

*,#,\$,%,&^ $p < 0.05$

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SURVIVAL IN PATIENTS WITH CONNECTIVE TISSUE DISEASE-ASSOCIATED PULMONARY ARTERIAL HYPERTENSION (CTD-PAH): A META-ANALYSIS OF OBSERVATIONAL REGISTRIES

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Background: Although patients with CTD-PAH comprise approximately one third of the overall PAH population, the literature on survival outcomes in CTD-PAH patients overall and by CTD subtype is limited by small sample sizes. We conducted a meta-analysis of more than 4,000 patients with CTD-PAH enrolled in observational registries.

Objectives: To determine survival rates in patients with CTD-PAH overall and by CTD subtypes.

Methods: The PubMed and EMBASE databases were searched for English-only articles published between January 1, 2000 and November 25, 2019. Inclusion criteria were multicenter registries of adults with WHO group 1 pulmonary hypertension (PAH); conducted in 2000 or later; and survival data for ≥30 patients with CTD-PAH. Meta-analysis of survival was performed using a random-effects model. Survival was estimated for CTD-PAH overall; for CTD-PAH stratified by registries primarily conducted before and after 2010 to assess the impact of new therapies, as well as combination therapy approaches targeting multiple pathways; and for CTD subtypes (systemic sclerosis [SSc] and systemic lupus erythematosus [SLE]).

Results: Nineteen registries met inclusion criteria and reported data on 4,008 patients with CTD-PAH. Of these patients, 1,485 had SSc, 456 had SLE, and

CTD subtype was not specified in 2,067. CTD-PAH patients had a mean age of 55 years and 87% were female. Most patients (70%) had functional class III or IV disease and the mean 6-minute walk distance at enrollment was 327 m. Among registries that enrolled patients of all PAH etiologies (N=7,829), survival rates in the CTD-PAH subpopulation (n=2113), were 83%, 73%, and 62% at 1-, 2-, and 3- years, respectively. These survival rates were lower than those reported for the overall PAH population: 88%, 79%, and 72% at 1-, 2-, and 3- years, respectively. Numerically higher survival rates at 1-, 2-, and 3- years were observed in CTD-PAH patients treated in 2010 and later: 85% vs 90%, 74% vs 82%, and 65% vs 73%. Among all CTD-PAH patients, survival rates were lower for patients with SSc compared to those with SLE: 88% vs 92%, 75% vs 82%, 67% vs 87% at 1-, 2-, and 3- years, respectively (Figure).

Conclusion: Patients with CTD-PAH have a substantial risk of death, however, CTD-PAH patients treated within the last ten years have numerically higher survival rates than those treated earlier. This may be related to increased screening for PAH, especially in SSc (leading to earlier diagnosis) and/or the availability of new treatment approaches. Consistent with clinical observations, patients with SSc have worse survival rates than those with SLE. Given the high risk of mortality in these patients, early detection and upfront aggressive treatment are warranted.

References:

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DIFFERENT ASSOCIATION BETWEEN BONE MINERAL DENSITY AND OSTEOARTHRITIS ACCORDING TO THE SITE OF OSTEOARTHRITIS

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Background: Osteoarthritis (OA) and osteoporosis (OP) are both high prevalence at old age, and there are various reports on the association between the two diseases. Some studies have shown that high bone mineral density (BMD) is a risk factor for OA incidence, while others have mentioned the possibility of OP contributing to onset of hip OA. Recent study described that higher BMD reduce the risk of hip OA and raise the risk of knee OA. So, the relationship between BMD and OA or the effects of BMD on different OA site are not clear yet.

Objectives: In this study, we investigated the association between BMD and radiographic OA using representative sample data of Korean adults.

Methods: The study included 6345 subjects aged 50 years or older who underwent BMD measurements using dual-energy X-ray absorptiometry and X-rays of at least one site of the spine, hip, and knee in the Korean National Health and Nutrition Examination Survey conducted in 2010-2011. OA was defined according to radiographic finding (KL grade ≥ 2). Weighted multivariable logistic regression was used to analyze the association between BMD and OA. Since gender differences are evident, men and women were analyzed separately.

Results: Spine OA was about 60% in both men and women, and hip OA was about 35% in men but only 1% in women. Knee OA was 76% in women and 58% in men. In men, the risk of OA increased 1.24 times as BMD increased by 1 g/cm². By site, knee and spine OA were statistically significant in relation to BMD, but hip OA was not statistically significant. In women, the association between BMD and knee and hip OA was insignificant. In spine OA, the risk of OA increased 1.2 times when BMD increased by 1 g/cm².

Conclusion: In conclusion, high BMD increased the risk of knee and spine OA in men, but did not affect hip OA. In women, high BMD increased the risk of spine OA. Differences in the mechanism of OA development by site are thought to be possible explanations for the differences in the association between BMD and OA.

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TEN-YEAR OUTCOME OF DIFFERENT SUBTYPES OF UNDIFFERENTIATED INFLAMMATORY ARTHRITIS

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Background: A group of patients with recent onset of arthritis always presents a certain difficulty for the practitioner due to its marked heterogeneity. This especially concerns the patients with undifferentiated inflammatory arthritis (UIA).

Objectives: To characterize the long-term nosological outcome of clinical and immunological subtypes of early UIA.

Methods: A cohort study of patients with recent onset of arthritis with a duration of not more than 12 months (n = 761, 82.8% females, 55.2% RF +) was initiated in 2003. All patients were referred to rheumatologist from GP with suspicion on inflammatory arthritis. Inclusion criteria: age 18 years or more, at least 1 swollen joint at 1st visit and/or positive squeeze test or morning stiffness for at least 30 minutes. 243 patients were initially classified as having UIA: 46 (18.9%) males, 197 (81.1%) females, age (median, quartiles)- 44 [29;53] years, duration of symptoms- 3 [2;5] months, swollen joints count (66/68)- 2 [1;4], tender joints count 3 [2;6], 85 (35%) rheumatoid factor (RF)+, 63 (25.9%) anti-CCP+. Patients with UIA were followed up for at least 10 years.

Results: 28 (11.5%) of patients were lost to follow up. Long-term observation was conducted in 215 patients. 22 (10.2%) of them developed persistent spontaneous (without use of DMARDs) remission. Other patients were finally classified as having: rheumatoid arthritis (RA) 138 (64.2%) and non-RA (25.6%). The spectrum of diagnoses in non-RA group included: ankylosing spondylitis, osteoarthritis, gout, psoriatic arthritis, polymyalgia rheumatica, systemic lupus, mixed connective tissue disease, sarcoidosis, paraneoplastic syndromes. The following characteristics at baseline positively correlated with the development of RA: arthritis of 3 or more joints (p=0.011), arthritis of hand (p=0.005), high ESR (p<0.001), high CRP (p=0.003), PF-positivity (p<0.001), anti-CCP-positivity

Table. Outcome of different subtypes of patients with UA after 10 years of follow up (n=215).

Subtypes of UA	Outcome			P (Pearson chi-squared test)
	Non-RA (n=55)	RA (n=138)	Spontaneous remission (n=22)	
Mono- and oligo arthritis (n=140)	40 (28.6%)	81 (57.9%)	19 (13.6%)	0,016
Polyarthritis (n=75)	15 (20%)	57 (76%)	3 (4%)	
RF-negative AND anti-CCP-negative (n=90)	34 (37.8%)	41 (45.6%)	15 (16.7%)	
RF+ OR anti-CCP+ OR low levels (<3 ULN) (n=92)	20 (21.7%)	65 (70.7%)	7 (7.6%)	<0,001
High RF+ AND High anti-CCP+ (n=33)	1 (3%)	32 (97%)	0	