

## Background & Objectives

Patients with systemic lupus erythematosus (SLE) are at increased risk for pregnancy complications and adverse pregnancy outcomes. Advances in drug treatment and better management during pregnancy enable successful pregnancy in patients with SLE. Less is known about pregnancies in other connective tissue diseases (OCTD). We compared pregnancy courses and outcomes in SLE, OCTD and other inflammatory rheumatic diseases (IRD).

## Patients & Methods

The pregnancy register Rhekiss is a nationwide, web-based observational cohort study. Pregnant patients with inflammatory rheumatic diseases can be enrolled until the 20<sup>th</sup> week of pregnancy regardless of drug treatment. At baseline, socio-demographics, prior pregnancies, comorbidities and antibody status are reported. During pregnancy, rheumatologists and patients report drug treatments, course of the maternal disease, development of fetus and complications once per trimester. After delivery, the pregnancy outcome and child development during the first two years of life are collected.

## Conclusions

Although most patients with SLE/OCTD had a favorable course and outcome of pregnancy, compared to patients with other IRDs, substantially more complications occurred in both groups. All SLE /OCTD patients should be tightly screened during pregnancy with timely and adequate adjustment of drug treatments.

## Results

Data of 455 patients were available in April 2017. The OCTD group comprised, among others, undifferentiated connective tissue disease (27), Sjögren Syndrome (23) and mixed connective tissue disease (9). Other IRDs included RA (128), psoriatic arthritis (39), spondyloarthritis (52), and JIA (21). 192 pregnancies were completed (table 2).

Table 1: Patient characteristics at enrolment

	SLE (n=104)	OCTD (n=77)	Other IRDs (n=271)
Pregnancies, n	105	78	272
Maternal age [years]	31.9 (4.4)	33.1 (4.2)	32.5 (4.2)
Disease duration [years]	7.6 (6.1)	5.9 (5.5)	8.1 (7.3)
Pregnancy counseling prior to conception, n (%)	Yes: 47 (82.5) No: 10 (17.5) Missing: 48 (45.7)	Yes: 35 (75.5) No: 12 (25.5) Missing: 31 (39.7)	Yes: 118 (80.3) No: 29 (19.4) Missing: 126 (46.1)
Gestational week	12.2 (5.4)	13.4 (4.9)	13.3 (5.3)
BMI > 30, n (%)	6 (8.8)	1 (1.9)	15 (8.4)
Disease activity (physician global) [0-10] (first trimester)	1.6 (1.5)	1.7 (1.5)	2.5 (2.1)
SLEPDAI [0-105]	2.1 (3.3)	-	-
RAID [0-10]	1.8 (1.6)	1.9 (1.9)	2.0 (1.9)
Chronic renal disease, n (%)	16 (12.7)	4 (4.4)	1 (0.3)
Prior thrombosis, n (%)	5 (4)	3 (3.3)	3 (0.8)
Hypertension, n (%)	10 (7.9)	3 (3.3)	5 (1.4)
Rheumatoid factor positive, n (%)	-	-	RA 58 (45), JIA 2 (9)
Lupus anticoagulant positive, n (%)	11 (10.5)	3 (3.8)	1 (0.4)
Anti-cardiolipin positive, n (%)	18 (17.3)	8 (10.3)	8 (2.9)
Anti-β2-GP-1 positive, n (%)	15 (14.4)	6 (7.7)	3 (1.1)
Antiphospholipid syndrome, n (%)	15 (14.2)	2 (2.6)	2 (0.7)

Values are means (SD) unless otherwise specified.

4 patients in the SLE group, 1 in OCTD, and 87 in other IRDs were treated with biologics until conception. 52 other IRD patients stopped biologics in the 1<sup>st</sup> trimester. HCQ was used during pregnancy in 63% SLE, 50% OCTD and 5% other IRD patients. Sulfasalazin was the most frequently used csDMARD in other IRDs during pregnancy (10.4%).

Table 2: Course and outcomes of completed pregnancies (n=192)

	SLE	OCTD	Other IRDs
<b>Maternal complications during pregnancy</b>			
Severe preeclampsia/HELLP	2 (4.4)	4 (10.5)	0
Thrombosis	1 (2.2)	0	0
Gestational diabetes	2 (4.4)	2 (5.3)	3 (2.8)
Infections (n)	Serious (2) Non-serious (2)	Serious (1) Non-serious (3)	Serious (2) Non-serious (4)
Flares, mean (SD)	1.0 (0)	1.4 (0.6)	2.2 (1.5)
<b>Pregnancy outcomes</b>			
Completed pregnancies, n	45	38	109
Miscarriages, n (week)	3 (9, 10 & 12) 2 * (15, 21)	2 (14 & 21)	5 (5, 8, 3 x 10)
Life births, thereof:	<b>40 (88.9)</b>	<b>36 (94.7)</b>	<b>104 (95.4)</b>
- preterm (< 37th week)	6 + 4x twins (25.0)	3 + 3x twins (16.7)	14 + 3x twins (16.3)
- at term (≥ 37th week)	28 + 2x twins (75.0)	30 (83.3)	86 + 1x twins (83.7)
Mean birth weight [g] of singletons born at term	3117	3131	3477
<b>Postpartal maternal complications</b>			
Diverse complications	Cerebral insult (1) Serious infection (1) Hypertensive crisis (1)	0	Macrophage activating syndrome (mother has Stills disease) (1)
<b>Neonatal complications</b>			
Congenital malformation (n)	Multiple anomalies * (1) Pierre-Robin-Syndr. (1) Hemangioma (1) Congen. megaureter (1)	Sacral agenesis (1) Hexadactylus (bilateral) (1)	Hip dysplasia (1) Sacral hemangioma (1)
Infections / ARDS (n)	Serious infection (3)	Serious infection (3) ARDS (3)	Non-serious infection (1) ARDS (1)
Neonatal death (n)	Sepsis (1)	ARDS (1) (preterm twin)	0

Values are n (%) unless otherwise specified. \*elective termination; ARDS: acute respiratory distress syndrome

2 SLE patients with serious complication during pregnancy had antiphospholipid syndrome. Apart from this, the antibody status was not different from other pregnancies in this group.

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