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Treatment Patterns Before and During Pregnancy in Women with Sjögren's Disease, Systemic Lupus Erythematosus, or Rheumatoid Arthritis: A Nationwide Population-Based Register Study in Sweden

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Background

- Pregnancy management in women with autoimmune diseases such as Sjögren's disease (SjD), systemic lupus erythematosus (SLE), and rheumatoid arthritis (RA) is challenging due to the need to balance maternal disease control and fetal safety.
- Understanding treatment patterns in pregnancies affected by maternal autoimmune diseases is crucial to optimizing disease control and minimizing maternal-fetal risks.
- Detailed knowledge of real-world treatment patterns before and during pregnancy is limited.

Objectives

- This study aims to describe characteristics, pregnancy outcomes, and medical treatment patterns in pregnancies affected by maternal SjD, SLE, or RA.

Methods

Study Design and Data Source

- A nationwide, population-based cohort study in Sweden using data from the Medical Birth Register, National Patient Register, Prescribed Drug Register, and Swedish Rheumatology Quality Register.

Study Outcome and Statistical Analysis

- Maternal characteristics included maternal age at delivery and parity.
- Pregnancy complications and outcomes included preeclampsia, eclampsia, cesarean delivery, stillbirth, preterm birth.
- Medication for underlying maternal autoimmune diseases during the 3-month preconception period and the entire pregnancy was summarized.
- Descriptive statistics were used to summarize maternal characteristics and outcomes, presenting median and interquartile range for continuous variables, and frequencies and percentages for categorical variables.

Study Cohort

Inclusion criteria

- Singleton pregnancies with gestational age ≥ 22 weeks (or ≥ 28 weeks prior to 2008-07-01) and a delivery date between 2001-01-01 and 2021-12-31 in women diagnosed with SjD, SLE, or RA in Sweden between 2000-01-01 and 2021-12-31*.

Exclusion criteria

- Pregnancies with missing data in gestational weeks.
- Pregnancies in which a confirmed diagnosis of SjD, SLE, and/or RA occurred after delivery.
- Pregnancies where the maternal age at delivery was below 15 years.

* A confirmed diagnosis of SjD (ICD10: M35.0), SLE (ICD10: M32), or RA (ICD10: M05-06) was defined as ≥ 2 visits to an outpatient clinic or ≥ 1 visit to an inpatient clinic with an associated primary or secondary diagnosis of the corresponding ICD-10 registered between 2000 and 2021. A woman was defined as having multiple autoimmune diseases as long as each disease fulfilled the aforementioned requirements independently.

Key Takeaways

- Pregnancies affected by maternal SjD, SLE, and/or RA had notable risks of adverse outcomes.
- Most women with SjD, SLE, and/or RA who were receiving treatment before pregnancy remained on treatment during pregnancy, and a substantial proportion of previously untreated women initiated treatment during pregnancy, particularly in women with SLE.
- These findings highlight the need to optimize pregnancy management in women with autoimmune diseases to improve pregnancy outcomes.

Results

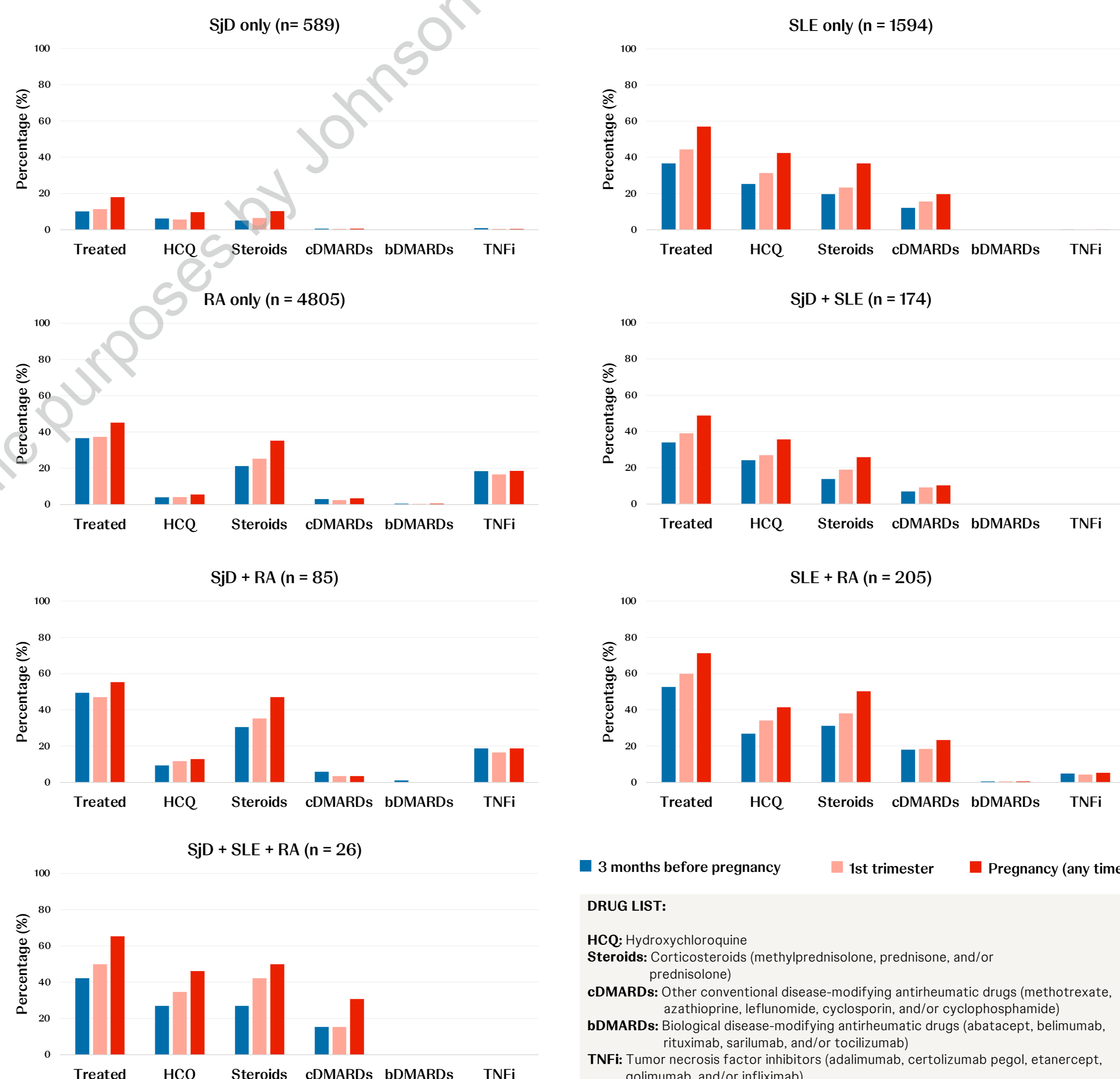
Characteristics and pregnancy outcomes of included pregnancies

	Total	SjD only	SLE only	RA only	SjD + SLE	SjD + RA	SLE + RA	SjD + SLE + RA
Study cohort								
Women, N (% of Total)	4959 (100)	409 (8.2)	1018 (20.5)	3195 (64.4)	120 (2.4)	66 (1.3)	133 (2.7)	18 (0.4)
Pregnancies, N (% of Total)	7478 (100)	589 (7.9)	1594 (21.3)	4805 (64.3)	174 (2.3)	85 (1.1)	205 (2.7)	26 (0.3)
Characteristics of pregnancies								
Median age (years) at delivery, (IQR)	33 (29-36)	33 (30-36)	32 (29-35)	33 (30-36)	34 (31-37)	34 (30-38)	33 (30-36)	33 (31-36)
Parity (after delivery), N (%)								
1	3120 (41.7)	245 (41.6)	694 (43.5)	1997 (41.6)	61 (35.1)	32 (37.7)	82 (40.0)	9 (34.6)
2	2896 (38.7)	222 (37.7)	596 (37.4)	1874 (39.0)	70 (40.2)	34 (40.0)	90 (43.9)	10 (38.5)
3	990 (13.2)	81 (13.8)	206 (12.9)	635 (13.2)	27 (15.5)	12 (14.1)	23 (11.2)	6 (23.1)
≥ 4	472 (6.3)	41 (7.0)	98 (6.2)	299 (6.2)	16 (9.2)	7 (8.3)	10 (4.9)	1-4
Pregnancy outcomes, N (%)								
Preeclampsia	398 (5.3)	18 (3.1)	136 (8.5)	213 (4.4)	11 (6.3)	5 (5.9)	14 (6.8)	1-4
Eclampsia	1-9	0 (0)	1-4	1-4	0 (0)	0 (0)	0 (0)	0 (0)
Cesarean delivery	2021 (27.0)	152 (25.8)	474 (29.7)	1236 (25.7)	50-53	30-33	70-73	2-9
Emergency	985 (13.2)	73 (12.4)	265 (16.6)	574 (12.0)	24 (13.8)	9 (10.6)	38 (18.5)	1-4
Planned	944 (12.6)	74 (12.6)	187 (11.7)	603 (12.6)	25 (14.4)	20 (23.5)	31 (15.1)	1-4
Missing	92 (1.2)	5 (0.9)	22 (1.4)	59 (1.2)	1-4	1-4	1-4	0 (0)
Stillbirth	38 (0.5)	1-4	7 (0.4)	22 (0.5)	1-4	1-4	1-4	1-4
Preterm birth	757 (10.1)	41 (7.0)	242 (15.2)	413 (8.6)	21 (12.1)	5 (5.9)	32 (15.6)	1-4

Note. SjD: Sjögren's disease. SLE: Systemic lupus erythematosus. RA: Rheumatoid arthritis. IQR: Interquartile range.

Due to data privacy regulations, values between 1 and 4 are shown as "1-4". Results that may reveal these values are presented as a value range.

Percentage of pregnancies receiving treatment at any time 3 months before pregnancy, in the first trimester, and during pregnancy.



Treatment transitions between preconception and pregnancy periods

