FRI0238

RISK OF THROMBOSIS IN PATIENTS RECEIVING STEROID PULSE THERAPY IN LUPUS NEPHRITISUSING JAPANESE HEALTH INSURANCE DATABASE

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Background: Patients with systemic lupus erythematosus, especially lupus nephritis (LN), have higher risk of thrombosis than the general population¹. Since use of corticosteroids also increase the risk of thrombosis², steroid pulse therapy (SPT) may increase the risk of thrombosis in patients with LN. However, few studies examined this association.

Objectives: To compare risk of thrombosis between patients with and without SPT in LN.

Methods: This retrospective, propensity score-matched cohort study was conducted using claims data provided by Medical Data Vision Co., Ltd (Tokyo, Japan). We defined individuals as LN cases if they met all of the following: 1) were diagnosed as LN; 2) had a dose of corticosteroids (CS) over 30 mg/day during hospitalization between April 2009 and January 2018; 3) were 16 years old or over. Cases with central neurological lupus, alveolar hemorrhage, or pregnancy at baseline were excluded. Cases with plasmapheresis or antiplatelet therapies at the start of observation, warfarin within a year, direct oral anticoagulants within a month, major surgery or lower limbs operation within three months, past thrombosis within a year, and prophylactic treatment of thrombosis from the observation starting month were also excluded from the study population. LN cases were divided into 2 groups; receiving SPT (SPT group, n=692) or not receiving SPT (non-SPT group, n=525). The start of observation was defined as commencement of CS treatment during hospitalization. Observation stopped either on April 2018 or the month cases were withdrawn from the database or developed first thrombosis, whichever came first. Thrombosis was defined as follows: at least one of three disease names (thrombosis, embolisms and infarction) and prescription of thrombolytic agents after the start of observation. After propensity-score matching, the incidence rate of thrombosis at Month 1, 2, 3, 4 was calculated using Kaplan-Meier methods. Univariate analysis were conducted by chi-squared test for categorical data and Mann-Whitney U-test for continuous data. Adjusted odds ratio (OR) was calculated using a multivariate logistic regression model.

Results: The mean age was 47 years old and the proportion of female was 76%. There were no statistically significant differences in baseline variables between the two groups after propensity-score matching (both groups: n=434). The percentage of cases with thrombosis in both groups at each month were similar (SPT vs non-SPT at Month 1, 2, 3, and 4; 3.0% vs 4.4% (p=0.28), 3.5% vs 5.1% (p=0.24), 3.9% vs 5.3% (p=0.331), and 4.6% vs 5.5% (p=0.536), respectively). There were no significant differences in cumulative incidence rates of thrombosis between the two groups (P=0.265 by log-rank test). Univariate analysis revealed five risk factors of thrombosis; activity of daily living (p=0.004), hepatic failure (p<0.0001), malignancy (p=0.02), and use of methotrexate (p=0.038) and oral contraceptive (p=0.037). After adjusting for covariates, OR of SPT was 0.82 [95%CI 0.44-1.52], which was not significantly elevated.

Conclusion: This study revealed that SPT did not increase the risk of thrombosis in patients with LN.

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FRI0239

HIGHER DOSE OF ADJUNCTIVE GLUCOCORTICOID THERAPY IS ASSOCIATED WITH MORTALITY OF PNEUMOCYSTIS PNEUMONIA IN PATIENTS WITH RHEUMATIC DISEASES

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Background: Pneumocystis pneumonia (PCP) is a fatal complication in patients with rheumatic diseases, and prognostic factors are not well recognized.¹ Adjunctive glucocorticoid therapy is beneficial for PCP in patients with acquired immunodeficiency syndrome, but the role in patients with rheumatic diseases is debated.²

Objectives: To investigate the prognostic factors of PCP in patients with rheumatic diseases.

Methods: Retrospective data was collected for all subjects with rheumatic diseases and PCP between October 2015 and October 2018 in a tertiary referral center. PCP was diagnosed via a positive sputum *Pneumocystis jirovecii* PCR in the presence of a compatible clinical presentation. The clinical characteristic, underlying rheumatic diseases, comorbidity, immunosuppressants, adjunctive glucocorticoid dose, and outcome were evaluated. Chest X-ray (CXR) was evaluated as a radiographic score (0-18), and a higher score suggested a more severe lung involvement. The prognostic factors of mortality were analyzed by multivariate logistic regression analysis.

Results: 40 patients with PCP and rheumatic diseases were included. The mean age of the patients was 55.7 years, and twenty (50%) were female. The underlying rheumatic diseases were systemic lupus erythematosus (30%), rheumatoid arthritis (22.5%), Sjögren's syndrome (12.5%), systemic vasculitis (12.5%), antiphospholipid syndrome (10%), idiopathic inflammatory myopathies (10%), undifferentiated connective tissue disease (7.5%), and psoriatic arthritis (2.5%). All subjects were separated into survivors (n=17) and non-survivors (n=23) groups. The overall in-hospital mortality rate was 57.5%. The group of non-survivors had a higher adjunctive glucocorticoid dose (p=0.016), an older age (p=0.017), and a higher CXR radiographic score (p=0.029). In multivariate analysis, independent predictors of mortality were increased glucocorticoid dose (>10mg/day) as adjunctive therapy (odds ratio, OR=5.58, 95% confidence interval, C.I.=1.09-28.62; p=0.039), age (OR=1.06, 95% C.I.=1.00-1.11; p=0.037), and CXR radiographic score (OR=1.21, 95% C.I.=1.00-1.47, p=0.048).

Conclusion: Increased glucocorticoid dose (>10mg/day) as adjunctive therapy, older age, and CXR radiographic score were independently prognostic factors of mortality in PCP patients with rheumatic diseases.

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FRI0240

15-YEAR EXPERIENCE IN A MULTIDISCIPLINARY UNIT FOR THE FOLLOW-UP OF PREGNANCY IN RHEUMATIC INFLAMMATORY AND AUTOIMMUNE DISEASES

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Background: Pregnancies in women with inflammatory and autoimmune diseases are considered high-risk pregnancies, so close and ideally multidisciplinary control is necessary. Given the advances in treatment and identification of risk factors a higher percentage of patients manifest gestational desire.

Objectives: To describe our experience in a multidisciplinary unit (integrated by Rheumatologists and Obstetrics) and assess the complications in the evolution of pregnancies and treatments used in patients with inflammatory and autoimmune diseases.

Methods: Retrospective study of pregnancy outcome in patients with rheumatic diseases and follow-up in a multidisciplinary unit for 15 years (January 2003-December 2018). Demographic characteristics, maternal disease, comorbidities, previous abortions, presence of autoantibodies (AAb), number of births, fetal losses and abortions during follow-up, previous treatment and treatment during pregnancy and maternal and fetal complications were collected.

Frequencies and percentages were used in qualitative variables, mean $\pm$ SD in quantitative and for the comparison between groups Chi2 test (or Fisher test if appropriate) was used in categorical variables and Student T test (or U of Mann-Whitney if appropriate) in quantitative variables. Data was analysed using IBM SPSS v23.

Results: 141 patients (194 pregnancies) were registered with maternal average age at rheumatic disease diagnosis of 29.14 ± 6.6 years and average age at abortion/childbirth of 34.82 ± 4.63 years. 12.8% were smokers and 21.1% had comorbidity (hypothyroidism:10.8%, dyslipidemia:2.1%). Maternal diseases are collected in table 1.

50 abortions were registered prior to follow-up in our unit (0.35 abortions/mother). During follow-up 19 abortions were registered (0.13 abortions/mother). Frequencies of abortions/births are specified in table 1.

13.5% of pregnancies were pre-term (< 37 weeks) and a caesarean section (C-section) was performed in 26% of cases. C-section was more frequent among asymptomatic women with positive autoantibodies (n:15, 30%), patients with SLE (n:13, 17.3%), RA (n:6, 37.5%) and PsA (n:6, 37.5%).

The frequency of different AAb is found in table 2.

Anti-Ro carriers (36.6%) did not have higher frequency of abortions ($p = 0.798$) and only one case of heart block was recorded among them. Abortions were more frequent among women with positive antiphospholipid antibodies (14.3% compared to 4.3%) ($p = 0.013$).

In inflammatory diseases (PsA, RA, spondyloarthropathies) no abortions were registered.

TABLE 1

MATERNAL DISEASE	n (%)	n abortions	n births
Systemic Lupus Erythematosus (SLE)	80 (42.1%)	5	75
Asymptomatic women with positive autoantibodies	52 (27.4%)	2	50
Antiphospholipid syndrome (APS)	19 (10%)	4	15
Rheumatoid Arthritis (RA)	17 (8.9%)	0	17
Sjögren Syndrome	8 (4.2%)	2	6
Psoriatic Arthritis (PsA)	5 (2.6%)	0	5
Mixed Connective Tissue Disease	3 (1.6%)	1	2
Behçet Syndrome	2 (1.1%)	0	2
Systemic Sclerosis	2 (1.1%)	0	2
Eosinophilic Arthritis	2 (1.1%)	0	2

TABLE 2

ANTIBODIES	n (%)
Antinuclear antibodies	115 (62.8%)
Anti-Ro	67 (36.6%)
Anticardiolipin antibodies IgG	51 (27.9%)
Antibodies to double-stranded DNA (anti-dsDNA)	35 (19.1%)
Anticardiolipin antibodies IgM	30 (16.4%)
Lupus Anticoagulant	25 (13.7%)
Rheumatoid Factor	23 (12.6%)
Anti-La	15 (8.2%)
Anti-citrullinated protein antibodies	12 (6.6%)
Anti-B2-glycoprotein I IgM	8 (4.4%)
Anti-B2-glycoprotein I IgG	1 (0.5%)

TABLE 3

PREVIOUS TREATMENT	n (%)	TREATMENT DURING PREGNANCY	n (%)
Hydroxychloroquine	97 (56%)	Acetylsalicylic acid	122 (62.5%)
Prednisone	23 (11.9%)	Hydroxychloroquine	119 (61.3%)
Methotrexate	6 (3.1%)	Prednisone	46 (24%)
TNF inhibitors	4 (2.1%)	Heparin	34 (17.5%)
Sulfasalazine	2 (1%)	Antibiotics	3 (1.5%)
Azathioprine	1 (0.5%)	Sulfasalazine	1 (0.5%)
Rituximab	1 (0.5%)	Chloroquine	1 (0.5%)
Leflunomide	0 (0%)	Methylprednisolone	0 (0%)
Mycophenolate Mofetil	0 (0%)	TNF inhibitors	0 (0%)

Intrauterine growth restriction (IUGR) was observed in 7 cases (3.7%) and pre-eclampsia in 6 (3%) being more frequent among patients with SLE (n:3 and n:2 respectively), APS (n:1 and n:1) and asymptomatic women with positive autoantibodies (n:2 and n:1). No difference was observed in complications rate between anti-Ro positive and anti-Ro negative women ($p = 0.047$).

Treatments used prior to and during pregnancy are shown in table 3.

Conclusion: In our series, as previously described in the literature, women with systemic autoimmune and inflammatory diseases have higher risk of abortion, pregnancy complications and instrumental delivery than general population. SLE and APS are most associated with these complications. Multidisciplinary close follow-up of these patients improves pregnancy outcomes.

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FRI0241

PREGNANCY RATES AND PERINATAL OUTCOMES AMONG WOMEN WITH SYSTEMIC LUPUS ERYTHEMATOSUS IN COMPARISON TO GENERAL POPULATION

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Background: Systemic lupus erythematosus (SLE) can affect people of all ages, but it occurs most often during childbearing ages. It has been documented that the fertility rates in women with SLE is similar to those

Table 1. Fertility rates in women with SLE compared with those of age-matched general population

Year	SLE			Total population†, n	General population		IRR (95%CI)	
	Prevalent case, n	Pregnancy case, n	N. of pregnancy per 1,000 persons, IR (95%CI)		Pregnancy case, n	N. of pregnancy per 1,000 persons, IR (95%CI)	unadjusted	Age-adjusted
2013	10,516	313	29.76 (26.47,33.06)	13,073,224	508,442	38.89 (38.78,39.00)	0.77 (0.69,0.86)	0.68 (0.61,0.76)
2014	11,205	331	29.54 (26.36,37.72)	12,992,974	512,712	39.46 (39.35,39.57)	0.75 (0.67,0.83)	0.66 (0.60,0.74)
2015	11,400	350	30.70 (27.49,33.92)	12,877,547	489,404	38.00 (37.90,38.11)	0.81 (0.73,0.90)	0.74 (0.66,0.82)