9. *Anti-Ro antibodies and cancer in Systemic Lupus Erythematosus.*

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Objective: There is a strong association of primary Sjogren's syndrome and lymphoma; anti-Ro antibodies are a characteristic feature of primary Sjogren's, but are also seen in systemic lupus (SLE). Our aim was to assess if positivity for anti-Ro might influence an SLE patient's risk of developing cancer.

Design and Method: We studied subjects from the McGill University Health Centre SLE registry. All patients with at least one visit since the year 2000 were included. Two patients who developed cancer prior to SLE were excluded. Patients were considered 'ever positive' after their first positive test for anti-Ro antibodies. We analyzed the cancer incidence across the entire cohort interval, stratifying person-years according to the antibody test results. Patients were followed from cohort entry up to the time of cancer occurrence, death, loss to follow-up, or end of study. We also ran a Cox proportional hazards regression, including demographics (sex, race, age at SLE diagnosis), SLE duration at cohort entry, smoking, and time-dependent covariates for other antibody positivity (anti-La, and anti-ds DNA), and key drugs (hydroxychloroquine, ASA, and NSAIDs), modelled as ever-never exposures.

Results: In our cohort of 458 patients, 32 developed cancers; 11 breast cancers, 4 lymphomas, 3 uterine, 2 colon, 2 basal cell skin and 2 kidney cancers, as well as one each of bladder, cervix, gallbladder, ovarian, prostate, melanoma, thyroid, and squamous skin cancer. There was a significant difference in the average age at SLE diagnosis between patients that eventually developed cancers (39.4 years, 95% confidence interval, CI 34.3-44.6) versus those that did not (31.8 years 95% CI 30.5-33.0). Across the entire cohort, 46% were ever-positive for anti-Ro antibodies. The cancer incidence ratio was 5.6/1,000 for person-years contributed by patients while anti-Ro negative, versus 3.0/1,000 for subjects after they had tested anti-Ro positive at least once. The differences between these incidence ratios were not statistically significant. The regression model results showed only age at SLE diagnosis (HR 1.07, 95% CI 1.04-1.11) and SLE duration at cohort entry (HR 1.08, 95%CI 1.03-1.14) as a strong predictor of cancer risk.

Conclusion: We did not detect a definite effect of anti-RO antibodies on cancer risk in SLE. Our analyses were however limited to a single centre, and we did not consider effect on specific types of cancer. Future analyses will aim to address these limitations.