Published in final edited form as:
Ann Rheum Dis. 2011 February ; 70(2): 393–394. doi:10.1136/ard.2010.131482.

Patients of Hispanic Background Develop Lupus Nephritis (LN) Early in the Disease Course: Data from a Multiethnic US Cohort

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Lupus nephritis (LN) is a major cause of morbidity and mortality in systemic lupus erythematosus (SLE) (1). We have previously examined the risk factors for LN in SLE patients from LUMINA (LUpus in MInorities: NAture vs Nurture), a multiethnic US cohort and found that LN occurs more frequently in Hispanics and African Americans (2). With one-third more patients and several years more of follow up of the cohort (2949.27 patient years from enrollment), we have now examined whether LN occurs earlier in the disease course in Hispanics than in the other ethnic groups. Four-hundred and forty-nine LUMINA patients (ACR criteria, age ≥16 years, disease duration ≤5years, and African-American, Hispanic or Caucasian ethnicity, xxx women) were studied. Time-to-LN was examined by multivariable Cox proportional hazards regression adjusting for pertinent baseline clinically and sociodemographic variables. LN was defined per the corresponding ACR criterion (persistent proteinuria greater than 0.5 grams per/day or greater than 3+ if quantitation not performed or cellular casts). Results are expressed as hazard ratios (HR); a HR>1= shorter time-to-the event; a HR<1= a longer time. Age, gender, and ethnicity were entered in all models. This model is depicted in Table 1. As we reported previously, ethnicity remains being a risk factor for LN; in the current study Hispanic (HR=2.32, 95% CI 1.03–5.25; p=0.043) and African American ethnicities (HR=2.57, 95% CI 1.26–5.26; p=0.001) were associated with a shorter time-to-LN occurrence compared with the Caucasians but so were photosensitivity (HR=2.10, 95% CI 1.09–4.01; p =0.025), serositis (pleurisy/pericarditis) (HR=2.00, 95% CI 1.09–3.67; p =0.025), and immunologic criterion (HR=5.56, 95% CI 2.12–14.60; p =0.001). Otherwise, age was weakly associated with a longer time-to-LN occurrence (HR=0.97, 95% CI 0.94–0.99, p=0.033).

Several studies have reported a higher frequency of LN in Hispanics compared to Caucasians. Higher disease activity, risk of relapses and of chronic renal failure and early

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mortality have also been reported (3–6); in addition, ethnicity may influence treatment response of LN (7) and, along with poverty, is an important risk factor for the progression of LN to renal damage (8). However, these studies have not shown that this is an early event in the course of disease (as compared to Caucasians).

LN is known to be associated with anti-DNA antibodies, thus the association with the immunologic criterion was not unexpected (9). Similarly, LN has been shown to be associated with activity in other organs system (10); therefore, it was not surprising the association with photosensitivity and serositis (pleurisy and pericarditis) we found.

The main limitation of our study is our inability to further disentangle the role of ethnicity per se vs. poor socio economic levels / poverty. Thus, our data should be interpreted with caution due to the observational nature of the data, different cycles of poverty and the self reported definition of ethnicity.

In summary, these patients along with those of African ancestry should be carefully monitored so that when LN supervenes they can be aggressively treated to prevent the occurrence of renal damage and its devastating consequences.

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Table 1

Multivariable Cox Proportional Hazard Model: Time-to-Lupus Nephritis

Variable	HR	95% CI	*P*-value
Age	0.97	0.94 – 0.99	0.0329
Gender	1.04	0.41 – 2.69	0.9275
Ethnicity			
Hispanic	2.32	1.03 – 5.25	0.0430
African American	2.57	1.26 – 5.26	0.0097
Caucasian		Reference Group	
Malar Rash	1.00	0.53 – 1.91	0.9897
Discoid Rash	0.98	0.46 – 2.09	0.9613
Photosensitivity	2.10	1.09 – 4.01	0.0251
Ulcers	1.54	0.87 – 2.73	0.1376
Arthritis	1.28	0.56 – 2.91	0.5615
Serositis	2.00	1.09 – 3.67	0.0250
Neurological involvement	0.73	0.31 – 1.72	0.4648
Hematologic	1.90	0.88 – 4.11	0.1034
Immunologic	5.56	2.12 – 14.60	0.0005
Antinuclear antibody	0.38	0.13 – 1.13	0.0815
Hydroxychloroquine	1.05	0.55 – 2.00	0.8943