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POSTER ABSTRACTS

654.MGUS, AMYLOIDOSIS AND OTHER NON-MYELOMA PLASMA CELL DYSCRASIAS: CLINICAL AND EPIDEMIOLOGICAL

Does Socioeconomic Status Have an Impact on Light Chain (AL) Amyloidosis Disease Characteristics and Outcomes?

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Background: Evidence suggests that low socioeconomic status leads to unequal access to care and outcomes. This can be particularly problematic for rarer diseases such as light chain (AL) amyloidosis. Using the Area Deprivation Index (ADI) as a proxy for socioeconomic status (SES), we hypothesized that persons living in areas with greater deprivation will exhibit differences in AL disease characteristics at diagnosis and worse post-diagnosis outcomes.
Methods: We conducted an IRB-approved, retrospective chart review of patients with systemic AL amyloidosis seen between January 1, 2010 and December 31, 2022 at a large and diverse health system in Milwaukee, Wisconsin. Patients with localized amyloidosis were excluded. Patients were identified using electronic health records. Demographic information (age, sex, race, zip code of residence, insurance, and marital status), disease characteristics (amyloid stage at diagnosis, type, and number of organs involved), and treatment indicators (stem cell transplant eligibility and utilization, time to first chemotherapy) were extracted for all eligible patients. The 2020 Area Deprivation Index (0-100, higher scores equating to higher deprivation) was calculated through the Neighborhood Atlas ® database using zip code and analyzed in quartiles. Spearman correlation was used to describe differences in sociodemographic and clinical characteristics across ADI quartiles and a Cox regression analysis was conducted for overall survival testing the association of ADI controlling for age, sex, race, disease stage, and number of involved organs. A p-value of <0.05 was considered statistically significant.
Results: Of the 200 patients with systemic AL amyloidosis who met our inclusion criteria, 8 patients were excluded due to missing/other race. Of the remaining 192 patients which comprised our final cohort, 171 (89%) were White, 21 (11%) were Black. Over half of all patients (51.5%) lived in neighborhoods in the two highest ADI quartiles. Patients in different ADI quartile categories differed significantly by race (Black and White, $p<0.001$), age at diagnosis ($p=0.012$), marital status ($p<0.001$), and Medicaid insurance ($p<0.001$) (Table 1). Differences in diagnostic and treatment characteristics were not observed across ADI quartiles (Table 1). There were also no differences in overall survival at 1, 5, and 8 years across ADI quartiles ($p=0.48$). Multivariable analyses revealed that older age at diagnosis, but not ADI, were associated with worse survival (Table 2). Interestingly, while stage 4 diagnosis alone was significant for worse survival ($p=<0.001$), in general there was no significant correlation between staging and survival (overall p-value=0.497) (Table 2). Controlling for ADI and other factors, Black AL patients were twice as likely as White AL patients to die (OR=2.10; 95% CI: 0.98-4.51), with a p-value of 0.058, marginally short of statistical significance.
Conclusion: Socioeconomic status, as measured by the Area Deprivation Index of the neighborhood of residence, was not associated with disease characteristics, treatment, and outcomes among patients with AL amyloidosis. Controlling for SES, however, Black AL patients had worse survival outcomes then their White counterparts. While there was no significant correlation between ADI and clinical characteristics, a substantial proportion of the cohort was living in highly socioeconomically disadvantaged neighborhoods. Given the nature of our study, we were only able to analyze patients who were seen at our

institution and our sample size was small. Studies of larger, multicenter populations are needed to better assess the effects of socioeconomic status and other social determinants of health on outcomes among patients with AL amyloidosis.

Disclosures Dhakal: *Janssen, Karyopharm, GSK, Arcellx, GSK,Sanofi , Genentech, Pfi zer:* Consultancy, Honoraria, Speakers Bureau. **Mohan:** *MashupMD:* Honoraria; *MJH life sciences:* Honoraria; *Institutional KL2 Award:* Other: Research Grant; *Blood Cancer Today:* Honoraria; *Amgen Inc:* Research Funding; *Novartis:* Research Funding; *Celgene Corporation:* Research Funding; *Bristol-Myers Squibb Company:* Research Funding; *Ionis Pharmaceuticals:* Research Funding; *Takeda Pharmaceutical Company:* Research Funding; *GlaxoSmithKline plc:* Research Funding; *Sanofi S.A:* Consultancy, Research Funding. **Pasquini:** *Kite, a Gilead Company:* Honoraria, Research Funding; *Bristol Myers Squibb:* Consultancy, Research Funding; *Novartis:* Research Funding; *Janssen:* Research Funding; *Kite Brazil:* Honoraria. **D'Souza:** *Abbvie, Sanofi, Takeda, TeneoBio, Caelum, Prothena:* Research Funding; *Janssen, Prothena:* Consultancy; *Imbrium, Pfizer, Bristol Myers Squibb:* Membership on an entity's Board of Directors or advisory committees.

Table 1. Baseline and Treatment Characteristics

Characteristic	2020 National ADI Quartiles					
	Overall, N = 192[1]	0-25, N = 19[1]	26-50, N = 74[1]	51-75, N = 60[1]	76-100, N = 39[1]	p-value[2]
Age at Dx	67 (32, 90)	69 (53, 82)	67 (35, 90)	67 (32, 84)	62 (40, 84)	**0.012**
Race, Non-Hispanic Black	21 (11%)	0 (0%)	0 (0%)	9 (15%)	12 (31%)	**<0.001**
Sex, Male	106 (55%)	9 (47%)	45 (61%)	36 (60%)	16 (41%)	0.47
Marital Status						
Married	140 (73%)	15 (79%)	67 (91%)	42 (70%)	16 (41%)	**<0.001**
Single / Divorced / Widowed	52 (27%)	4 (21%)	7 (9%)	18 (30%)	23 (59%)	
Medicaid Insurance	24 (13%)	0 (0%)	6 (8%)	8 (13%)	10 (26%)	**<0.001**
2020 ADI State Decile	4 (1, 10)	1 (1, 2)	2 (1, 5)	6 (4, 8)	9 (6, 10)	
2020 ADI National Decile	53 (13, 100)	21 (13, 25)	37 (26, 50)	60 (51, 75)	86 (77, 100)	
Type of organ involvement						
Cardiac	113 (59%)	11 (58%)	43 (58%)	39 (65%)	20 (51%)	0.962
Neurological	40 (21%)	4 (21%)	16 (22%)	14 (23%)	6 (15%)	0.992
Renal	119 (62%)	9 (47%)	48 (65%)	40 (67%)	22 (56%)	0.822
Hepatic	21 (11%)	2 (11%)	5 (7%)	9 (15%)	5 (13%)	0.372
Gastrointestinal	46 (24%)	4 (21%)	14 (19%)	17 (28%)	11 (28%)	0.232
Soft tissue	33 (17%)	3 (16%)	8 (11%)	16 (27%)	6 (15%)	0.252
Number of organs involved						0.852
1	61 (32%)	6 (32%)	24 (32%)	15 (25%)	16 (41%)	
2	74 (39%)	7 (37%)	30 (41%)	23 (38%)	14 (36%)	
3	38 (20%)	6 (32%)	15 (20%)	13 (22%)	4 (10%)	
4+	19 (10%)	0 (0%)	5 (7%)	9 (15%)	5 (13%)	
Mayo 2012 Amyloid Stage at Diagnosis (N=191)[3]						0.912
1	41 (21%)	5 (26%)	16 (22%)	10 (17%)	10 (26%)	
2	59 (31%)	8 (42%)	16 (22%)	21 (35%)	14 (36%)	
3	56 (29%)	3 (16%)	26 (35%)	21 (35%)	6 (15%)	
4	35 (18%)	3 (16%)	16 (22%)	7 (12%)	9 (23%)	
Coexisting Multiple Myeloma	115 (60%)	9 (47%)	43 (58%)	35 (58%)	28 (72%)	0.192
Received Chemotherapy	190 (99%)	19 (100%)	73 (99%)	59 (98%)	39 (100%)	0.71
Time from Dx to Chemotherapy	23 (-211, 1,704)	27 (-203, 1,220)	20 (-211, 1,704)	25 (-16, 814)	35 (-66, 592)	0.16
Eligible for SCT	147 (77%)	15 (79%)	51 (69%)	49 (82%)	32 (82%)	0.14
Received SCT among Eligible (n=147)	112 (76%)	11 (73%)	41 (80%)	36 (73%)	24 (75%)	0.57

[1] n (%); Median (Range)
[2] Spearman correlation with 2020 ADI National Decile
SCT = stem cell transplant; BNP = basic natriuretic peptide; Trp = troponin
[3] *One patient excluded due to missing biomarker needed for diagnosis*

Table 2. Multivariate analysis of factors associated with overall survival

Variable	Hazard Ratio (HR) with 95% Confidence Interval (CI)	p-value
Age at Diagnosis	1.04 (1.01, 1.07)	**0.007**
Sex, Male	0.85 (0.53, 1.38)	0.52
Race, Black	2.1 (0.98, 1.01)	0.058
2020 ADI National Decile	1 (0.98, 1.01)	0.53
Mayo 2012 Amyloid Stage at Diagnosis		0.497
1	Reference	
2	1.36 (0.58, 3.18)	0.47
3	2.22 (1.00, 4.96)	0.051
4	6.29 (2.66, 14.8)	**<0.001**
Number of organs involved		0.998
1	Reference	
2	0.96 (0.52, 1.78)	0.90
3	1.12 (0.56, 2.26)	0.74
4+	1.04 (0.41, 2.65)	0.93

Figure 1

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