

The relationship between peer support, medication adherence, and quality of life among patients with vasculitis

Sirs,

Management of vasculitis can be challenging because it requires lifestyle modifications, such as taking new medications that are associated with serious side effects. Support from physicians has been shown to improve medication adherence and self-efficacy among vasculitis patients (1-3). Although never formally tested in vasculitis patients, support from peers may also play a vital role in alleviating anxiety about the disease, improving health outcomes (4-5), and promoting medication adherence. Our objective was to examine whether adherence-related support from peers affected vasculitis patients' medication adherence, physical quality of life, and mental quality of life (QOL).

Adult vasculitis patients (n=172) completed online questionnaires at baseline and 3-month follow-up that assessed demographics and clinical characteristics, vasculitis medication adherence, and QOL (1). In this study, a peer was defined as an "individual who is living with vasculitis including someone from a vasculitis support group, a neighborhood, church, or clinic." Peer support for medication adherence was assessed with nine items measured on a 5-point scale (range 1= "not applicable" to 5= "does this a lot") ($\alpha=0.92$). Medication adherence was measured using the Vasculitis Self-Management Survey ($\alpha=0.87$); higher scores indicate greater adherence (range 1-5) (6). Participants' QOL was assessed using the Physical Component Summary ($\alpha=0.82$) and the Mental Component Summary ($\alpha=0.86$) scores from the Rand 36-item health survey v.1.0 (7); higher scores indicate better QOL (range 0-100). Using SPSS v.21.0, descriptive statistics were calculated and Pearson correlations were computed to assess the relationship between peer support, medication adherence, and physical and mental QOL. Linear regressions examined whether peer medication adherence-related support at baseline predicted patients' vasculitis medication adherence, physical QOL, and mental QOL at follow-up ($\alpha=0.05$). All regressions controlled for participant's age, gender, race, perceived vasculitis severity, disease duration, and physician diagnosed vasculitis type.

Table I displays the sociodemographic and clinical characteristics of the sample. Participants reported low physical (M=38.2; SD=9.9) and mental (M=45.3; SD=12.8) QOL, and high levels of vasculitis medication adherence (M=4.3; SD=0.7). On average, patients reported little medication adherence-related support from peers (M=2.1; SD=0.9). Approximately 36% of partici-

Table I. Sample characteristics (n=172).

Characteristics	Mean \pm SD or n (%)	Range
<i>Sociodemographics</i>		
Age	49.9 \pm 13.3	21.0-82.0
Gender		
Male	43 (25.0)	
Female	129 (75.0)	
Race/Ethnicity		
African American	1 (0.6)	
Asian	5 (2.9)	
Hispanic/Latino	3 (1.7)	
White	158 (91.9)	
Other	5 (2.9)	
Years of education	15.6 \pm 2.8	4.0-22.0
Health insurance		
Insured	159 (93.5)	
Uninsured	11 (6.5)	
Peer support for medication adherence ^a	2.1 \pm 0.9	1-4
<i>Clinical</i>		
Years with vasculitis	6.4 \pm 6.2	0.5-36.5
<i>Relapse status</i>		
Currently relapsing	53 (31.0)	
Less than 1 year ago	54 (31.6)	
More than 1 year ago	44 (25.7)	
Never experienced	20 (11.7)	
Perceived severity ^b	4.5 \pm 2.2	1-10
<i>Self-reported vasculitis type</i>		
Granulomatosis with polyangiitis (GPA; formerly Wegener's granulomatosis)	106 (61.6)	
Microscopic polyangiitis (MPA)	14 (8.1)	
Eosinophilic granulomatosis with polyangiitis (EGPA) (formerly Churg-Strauss syndrome)	21 (12.2)	
Anti-Neutrophil Cytoplasmic Autoantibody (ANCA) disease		
Takayasu arteritis (TA)	1 (0.6)	
Polyarteritis nodosa (PAN)	8 (4.7)	
Behçet's disease	8 (4.7)	
Don't know	3 (1.7)	
Other	2 (1.2)	
Other	9 (5.2)	
Vasculitis medication adherence ^c	4.3 \pm 0.7	1.6-5.0
Physical Quality of life ^d	38.2 \pm 9.9	16.7-62.4
Mental Quality of life ^e	45.3 \pm 12.8	14.6-65.2

^a Overall peer support using 4 categories ("not applicable" and "does not do this" were combined); higher scores indicate more support.

^b Perceived severity ranged from "not at all severe" to "extremely severe."

^c Possible score range=1 to 5, higher scores indicate greater adherence.

^d Possible score range= 0 to 100, higher scores indicate higher physical quality of life.

^e Possible score range= 0 to 100, higher scores indicate higher mental quality of life.

pants believed support from peers was "not applicable". Correlations between peer support and vasculitis medication adherence ($r=0.011$, $p=0.89$), physical QOL ($r=-0.003$, $p=0.97$), and mental QOL ($r=0.077$, $p=0.33$) were insignificant. Peer support was not significant in any of the three regression models. Younger age ($p<0.03$) was associated with worse vasculitis medication adherence. Older age ($p<0.01$), female gender ($p<0.04$), higher perceived vasculitis severity ($p<0.001$), and shorter disease duration ($p<0.02$) were all associated with worse physical QOL. Less severe vasculitis ($p<0.001$) was associated with better mental QOL.

Adherence-related support from peers did not predict vasculitis medication adherence or QOL. Conversely, other studies have found that peer support was associated with better outcomes among patients with chron-

ic diseases (8-9). Many participants reported that adherence-related support from their peers was "not applicable." In a recent study, Carpenter and colleagues found that vasculitis negatively impacted patients' friendships and decreased social participation. Reduced social participation was often attributed to a friend's lack of understanding about vasculitis, the fatigue arising from the disease, and lifestyle changes related to medication (10). Prior analyses from this dataset have shown that provider support was related to better medication adherence (3). Thus, adherence-related support from peers may impact vasculitis patient medication adherence less so than adherence-related support from other social network members, such as physicians. Future studies should examine which types of support (disease-specific vs. general) vasculitis patient's desire from their peers, recruit a diverse

Letters to the Editors

sample (i.e. education, insurance status, and racial/ethnic diversity), and provide a comprehensive instrument that incorporates structural, practical, and emotional support.

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References

1. CARPENTER DM, KADIS JA, DEVELLIS RF, HOGAN SL, JORDAN JM: The effect of medication-related support on the quality of life of patients with vasculitis in relapse and remission. *J Rheumatol* 2011; 38(4): 709-15.
2. CARPENTER DM, DEVELLIS RF, FISHER EB, DEVELLIS BM, HOGAN SL, JORDAN JM: The effect of conflicting medication information and physician support on medication adherence for chronically ill patients. *Patient Educ Couns* 2010; 81 (2): 169-76.
3. PEPPER JK, CARPENTER DM, DEVELLIS RF: Does adherence-related support from physicians and partners predict medication adherence for vasculitis patients? *J Behav Med* 2012; 35(2): 115-23.
4. PENNINX B, KRIEGSMAN D, VAN EIJK J, BOEKE A, DEEG D: Differential effect of social support on the course of chronic disease: a criteria-based literature study. *Families, Systems & Health* 1996; 14(2): 223-44.
5. KAWACHI I, BERKMAN L: Social cohesion, social capital, and health. In BERKMAN LF, KAWACHI I (Eds.): *Social Epidemiology*. Oxford: Oxford University Press 2000: 174-90.
6. THORPE CT, DEVELLIS RF, LEWIS MA, BLALOCK SJ, HOGAN SL, DEVELLIS BM: Development and initial evaluation of a measure of self-management for adults with antineutrophil cytoplasmic antibody-associated small-vessel vasculitis. *Arthritis Care Res* 2007; 57(7): 1296-302.
7. HAYS RD, SHERBOURNE CD, MAZEL RM: The RAND 36-item health survey 1.0. *Health Econ* 1993; 2(3): 217-27.
8. POWER S, HEGARTY J: Facilitated peer support in breast cancer: a pre-and post-program evaluation of women's expectations and experiences of a facilitated peer support program. *Cancer Nurs* 2010; 33(2): 9-16.
9. CHLEBOWY DO, HOOD S, LAJOIE SA: Focus group findings facilitators and barriers to self-management of type 2 diabetes among urban African American adults. *Diabetes Educ* 2010; 36(6): 897-905.
10. CARPENTER DM, MEADOR AE, ELSTAD EA, HOGAN SL, DEVELLIS RF: The impact of vasculitis on patients' social participation and friendships. *Clin Exp Rheumatol* 2012; 30 (1 Suppl. 70): S15-S21.