IMPACT OF HYPERTENSION ON HEALTH RELATED QUALITY OF LIFE IN CHILDHOOD-ONSET SYSTEMIC LUPUS ERYTHEMATOUS

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Background: SLE can significantly impact health-related quality of life (HRQOL) due to disease complications or necessary therapies. Hypertension (HTN) also influences HRQOL. In cSLE, secondary HTN can be diagnosed in 40-70% due to nephritis and/or medications (i.e. steroids). We assess the impact of HTN on HRQOL in patients diagnosed with active SLE age 7-18 years at Texas Children Hospital.

Materials/Methods: 11 subjects met inclusion criteria:(1) diagnosis of SLE, as determined by Rheumatology, (2) age 7-18 years, (3) new-onset disease or flare between 11/2020 and 05/2021. Subjects were excluded if unable to complete the questionnaire, obese or had CKD (comorbidities known to impact HRQOL). We classified HTN using ambulatory blood pressure monitoring (ABPM) at enrollment and office blood pressure at follow up. HRQoL was measured by both patients and parent proxy, using disease-specific SMILEY© (Simple Measure of Impact of Lupus in Youngsters) tool. Disease activity was scored by Systemic Lupus Erythematosus Disease Activity Index (SLEDAI). Chronic injury was scored by SLICC Damage index (SDI). Follow-up data was available for 9/11 patients 6-9 months after enrollment. Jamovi was used to analyze demographic data with descriptive statistics. Differences between groups were assessed using Fisher's exact and independent T-Tests .Spearman Rank correlation measured correlations between ABPM and SMILEY data.

Results: Median age at enrollment was 17 (IQR13-18) years and median SLEDAI was 11 (IQR3-19). At baseline, there were no differences in demographics or clinical features between normotensive and HTN groups. At baseline, SMILEY© scores (child and parent) were 4 points lower in the hypertensive versus normotensive group. Mean 24-hr systolic load (SL) (r=-0.7) ,diastolic load (DL) (r=-0.9), wake SL (r=-0.7), wake DL (r=-0.7) and sleep DL (r=-0.76) all inversely correlated with child SMILEY scores. At follow up, child SMILEY scores were 8 points lower in the hypertensive groups defined by ABPM versus the normotensive group. However, there were no differences in HRQoL in those who stayed normotensive (n= 4) or had resolved hypertension (n=2). Those with persistent hypertension(n=3) had an 8 and 7-point improvement in Smiley score (child and parent) but this is more likely by 11-point improvement in SLEDAI score.

Conclusions: In cSLE, Ambulatory BP significantly impacts HRQOL at onset of disease, with lower child- and parent-reported HRQOL. HTN at baseline also predicts lower HRQOL in the child reported scores.

Images / Graph / Table

Table 1 showing Median SMILEY © scores stratified by ABPM Classification of HTN at Enrollment baseline and follow up

	ABPM	Normotensive	HTN	Mean Difference
		Median (IQR)	Median (IQR)	
Child Report Baseline	Global	4(2.5-4.5)	4 (3-4)	0
	SLE	3(3)	4(3-4)	1
	Effect on Self	12(12-16)	16.5 (15-17)	+2.5
	Limitations	16(15-18)	18 (16-20)	+2
	Social	16 (15-19)	18.5 (17-18)	+1.5
	Burden of SLE	18 (18-24)	18 (17-19)	0
	SMILEY Total Score	61 (59-62)	57 (55-61)	+4*
Parent Report Baseline	Global	3(4-5)	5(5-5)	2
	SLE	4(3-4)	2(2-2.8)	-2
	Effect on Self	16(15-17)	11.5 (11-13)	+4.5*
	Limitations	19 (18-20)	17 (13-23)	-2
	Social	13 (13-16)	13 (13-19)	3
	Burden of SLE	19 (18-20)	18 (15-21)	-1
	SMILEY Total Score	89 (81-91)	81(80-90)	+4*
Child Report Follow up	Global	4(4-5)	4 (4-4.3)	0
	SLE	4(3-5)	4.5(4-5)	0.5
	Effect on Self	17(13.5-18)	13.5 (15-17)	-3.5
	Limitations	23(19-28)	19 (16-23)	-4
	Social	17 (17)	13.5 (10-17)	-3.5
	Burden of SLE	19 (17-23)	23 (15-22)	4
	SMILEY Total Score	64 (60-73)	56 (47-66)	-5*
Parent Report Follow up	Global	3.5(3.5-4)	4(3-4)	0.5
	SLE	4(3.5-4)	3.5(3-4)	0.5
	Effect on Self	16 (15-17)	15.5 (14-16)	0.5
	Limitations	17 (13-20)	19.5 (17-24)	2.5
	Social	14 (14-15)	15 (14-16)	1
	Burden of SLE	17 (17-18)	17.5 (17-20)	0.5
	SMILEY Total Score	62 (58-66)	61(54-68)	1

* Denotes a significant decrease in quality of life score