

Background

- Hypertension (HTN) is common in SLE and a key cardiovascular disease risk factor.¹
- Hypertension Canada recommends a target blood pressure (BP) of <140/90 mmHg, while the American College of Cardiology/American Heart Association (ACC/AHA) recommend a more stringent target of <130/80 mmHg.^{2,3}
- We described HTN treatment in SLE, evaluating uncontrolled HTN according to both guidelines, and determining if uncontrolled HTN was more common in vulnerable groups (older patients, males, and non-Caucasians).

Methods

- We conducted a cross-sectional study of the McGill Lupus Cohort, who receive standardized annual assessments including BP (sitting with automated cuff), medications, and clinical data.
- We studied all patients between Jan. 2017 - May 2019 taking HTN medications at their last visit, excluding those taken only for other indications (e.g. Raynaud's, proteinuria).
- We described HTN treatment and frequency of uncontrolled HTN as per ACC/AHA definitions of BP >130/80 mmHg.
- Multivariate logistic regression (adjusted for age, sex, and race/ethnicity) evaluated uncontrolled HTN in groups at risk of suboptimal health outcomes, including seniors, non-Caucasians, males, and those with active SLE, high body mass index (BMI), or renal damage.

Results

- Of 442 SLE patients, 108 were treated for HTN, and 38 took multiple BP drugs concurrently.
- Angiotensin receptor blockers were most common, followed by calcium channel blockers, diuretics, ACE inhibitors, and beta-blockers.
- Almost forty percent (N=43, 39.8%) of patients treated for HTN had a BP >140/90 mmHg, and almost two-thirds (N=70, 64.8%) had a BP >130/80 mmHg.
- In multivariate analyses of the 108 treated for HTN, Caucasians and higher BMI patients had more uncontrolled HTN, and those with renal damage had better BP control. We could not draw conclusions about other factors (Table 1).

Table 1: Logistic regression of SLE patients treated for HTN: Odds Ratios (OR) for uncontrolled HTN (>130/80 mmHg)

Variables	Unadjusted OR (95% CI)	Adjusted OR (95% CI) ^a
Male	1.00 (0.35-3.11)	1.27 (0.42-4.24)
Caucasian race/ethnicity	2.33 (1.01-5.40)	2.72 (1.12-6.78)
Age at last visit > 65 years	1.69 (0.74-3.99)	1.68 (0.71-4.08)
Body mass index	1.06 (0.98-1.15)	1.08 (1.00-1.19)
SLE duration (years)	1.00 (0.97-1.03)	0.99 (0.96-1.02)
SLEDAI-2K ≥ 4	0.71 (0.32-1.60)	0.77 (0.33-1.76)
Renal damage ≥ 1	0.36 (0.15-0.84)	0.39 (0.16-0.97)
Using more >1 BP medication	1.65 (0.71-4.08)	1.54 (0.63-3.96)

^a Variables adjusted for age at last visit, sex and race/ethnicity.

Discussions/Conclusions

- Of 108 SLE patients treated for HTN, almost 40% had a BP >140/90 mmHg and almost two-thirds had a BP >130/80 mmHg.
- Study limitations include the cross-sectional design and single BP measurement.
- Caucasians and higher BMI patients had more uncontrolled HTN (>130/80 mmHg). The association with BMI is expected, but the association with Caucasian race/ethnicity may seem counter-intuitive. Further work (with a longitudinal repeated measures design) will explore if HTN drugs, SLE disease and/or other drugs (e.g. steroids, NSAIDs) may be driving results.
- **The negative association of uncontrolled HTN with renal damage is reassuring, as BP control is key to delaying further renal damage.**

References

- ¹ Bruce IN, et al. Risk factors for coronary heart disease in women with systemic lupus erythematosus. *Arthritis Rheum* 2003;48:3159-67. doi:10.1002/art.11296.
- ² Leung AA, et al. Hypertension Canada's 2017 Guidelines for Diagnosis, Risk Assessment, Prevention, and Treatment of Hypertension in Adults. *Can J Cardiol*. 2017;33(5):557-576. doi:10.1016/j.cjca.2017.03.005.
- ³ Whelton PK, et al. 2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults. *J Am Coll Cardiol*, 2018. 71(19): p. e127- e248. doi:10.1161/HYP.0000000000000065.

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