



Lower May Not Be Better Systolic Blood Pressure And Risk Of Major Adverse Limb Events In Patients With Symptomatic Peripheral Artery Disease After Revascularization: Insights From VOYAGER PAD

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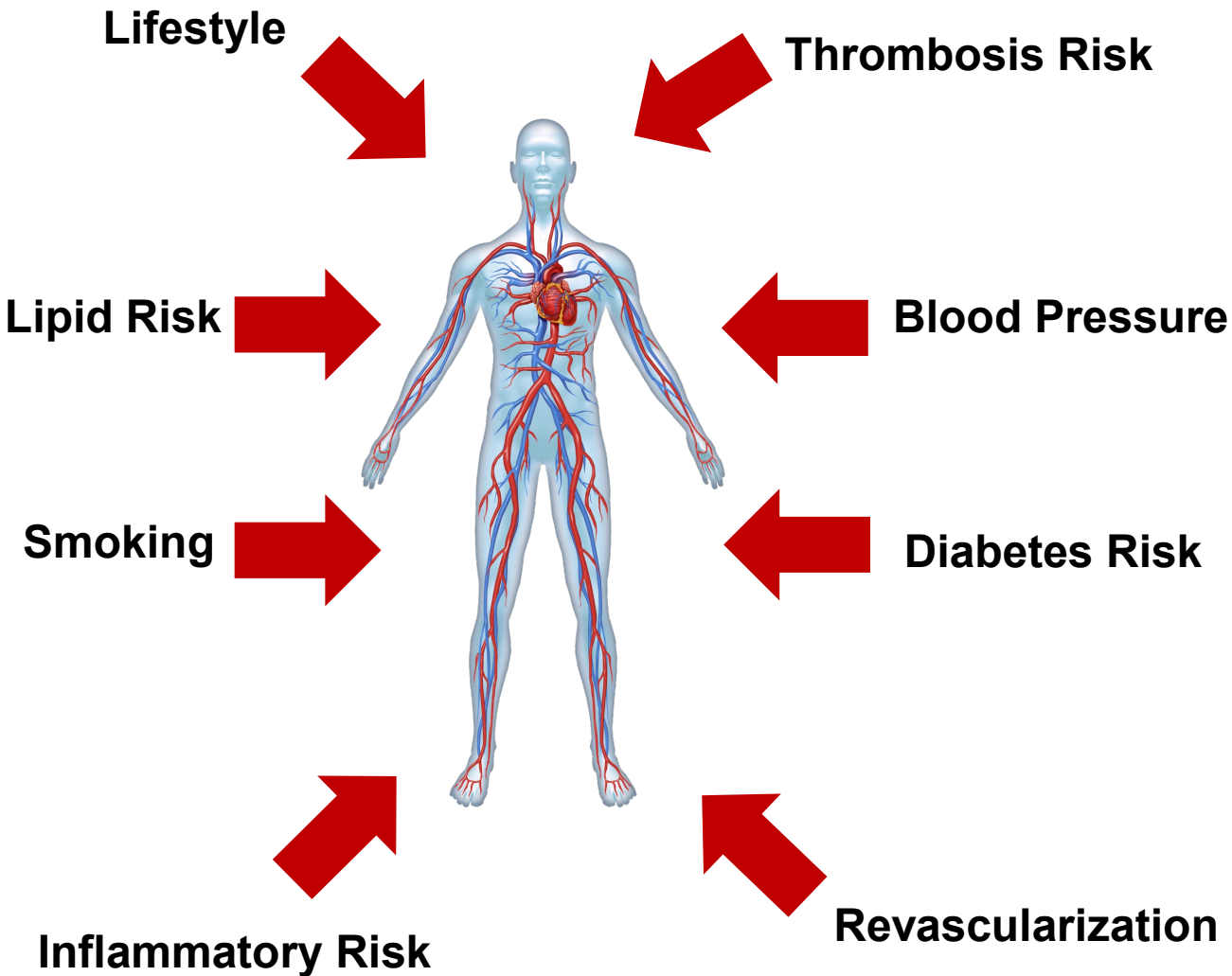
Disclosures

Cullen Buchanan, MD^{1,2}: No conflicts/disclosures

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Goals



1. Emphasize a multimodal approach to the treatment of symptomatic peripheral artery disease (PAD), including **blood pressure (BP)** and **lower extremity revascularization (LER)**

2. Highlight the current uniform approach to blood pressure management

3. Consider an **individualized approach to BP management in patients with symptomatic PAD in the first month following LER**

Background

- PAD affects >200 million individuals worldwide
- Hypertension (HTN) is a significant risk factor for major adverse cardiovascular events (MACE) and there are well established optimal BP targets for MACE prevention
- Less intensive BP control is allowed to minimize end organ damage in certain settings such as acute ischemic stroke and acute kidney injury

2017 ACC/AHA Hypertension Guidelines

9.5. Peripheral Artery Disease

Recommendation for Treatment of Hypertension in Patients With PAD		
References that support the recommendation are summarized in Online Data Supplement 45 .		
COR	LOE	Recommendation
I	B-NR	1. Adults with hypertension and PAD should be treated similarly to patients with hypertension without PAD. ^{S9.5-1–S9.5-4}

Background

- Re-analysis of the ALLHAT trial investigated the effect of different antihypertensive medications on cardiovascular events, including PAD related events.
- **Systolic blood pressure (SBP) <120mmHg was associated with a 26% higher rate of major adverse limb events (MALE) in stable patients with PAD**

PAD event hazard ratios of individual blood pressure categories.

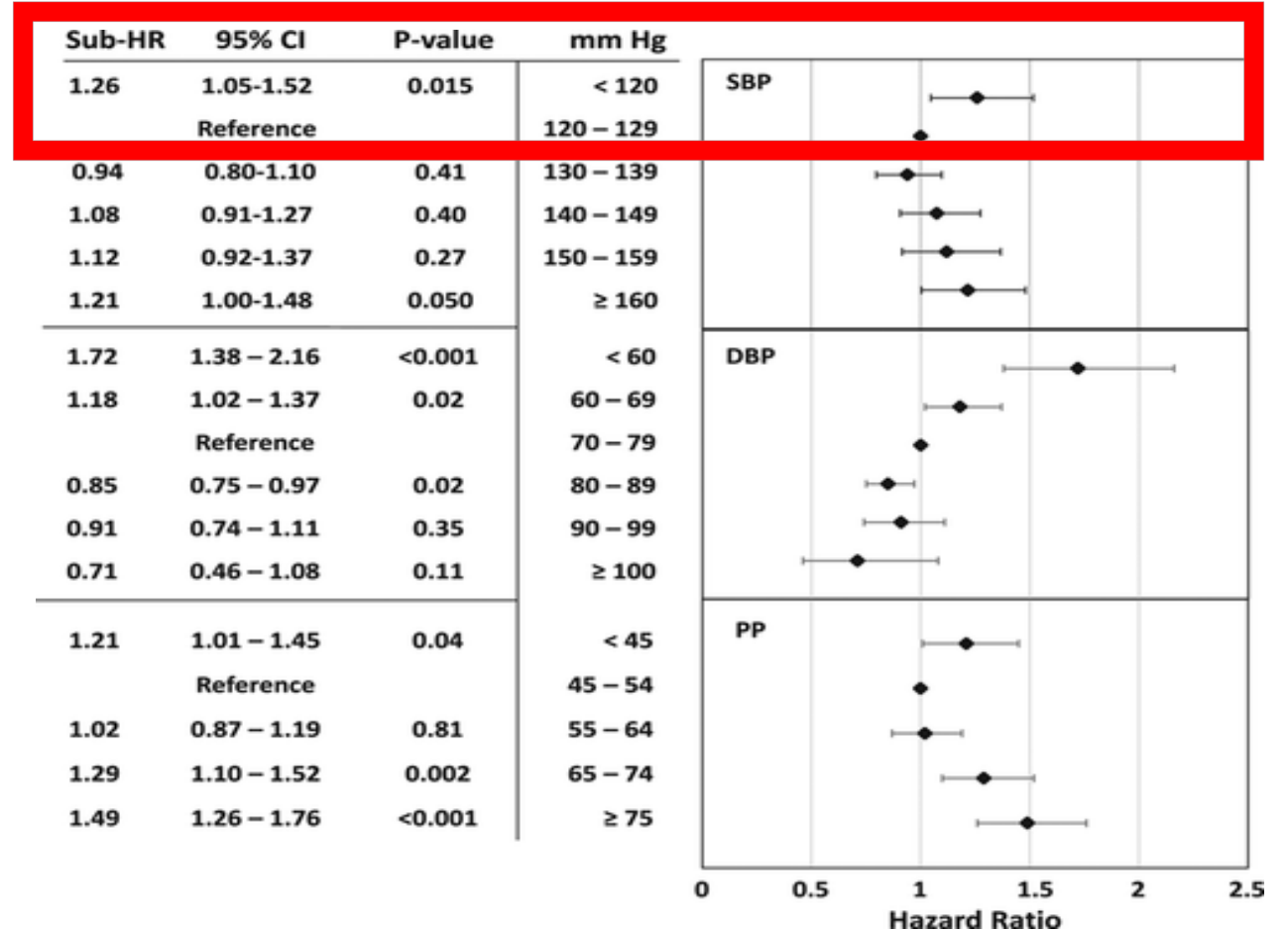


Figure 2. PAD event hazard ratios of individual blood pressure categories. Association of categories of systolic blood pressure (SBP), diastolic blood pressure (DBP), and pulse pressure (PP) with lower extremity PAD events.

Nathan K. Itoga. Circulation. Association of Blood Pressure Measurements With Peripheral Artery Disease Events, Volume: 138, Issue: 17, Pages: 1805-1814, DOI: (10.1161/CIRCULATIONAHA.118.033348)

VOYAGER PAD TRIAL DESIGN

6564 Patients with Symptomatic Lower Extremity PAD Undergoing Peripheral Revascularization

Screening Phase: BP measured at 30 days prior to LER up to 10 days after LER

Treatment Phase: BP measured at baseline, 1, 3, 6, 12 and every 6 months after LER

Rivaroxaban 2.5 mg twice daily + Aspirin 100mg once daily

Randomization after LER

Placebo + Aspirin 100mg once daily

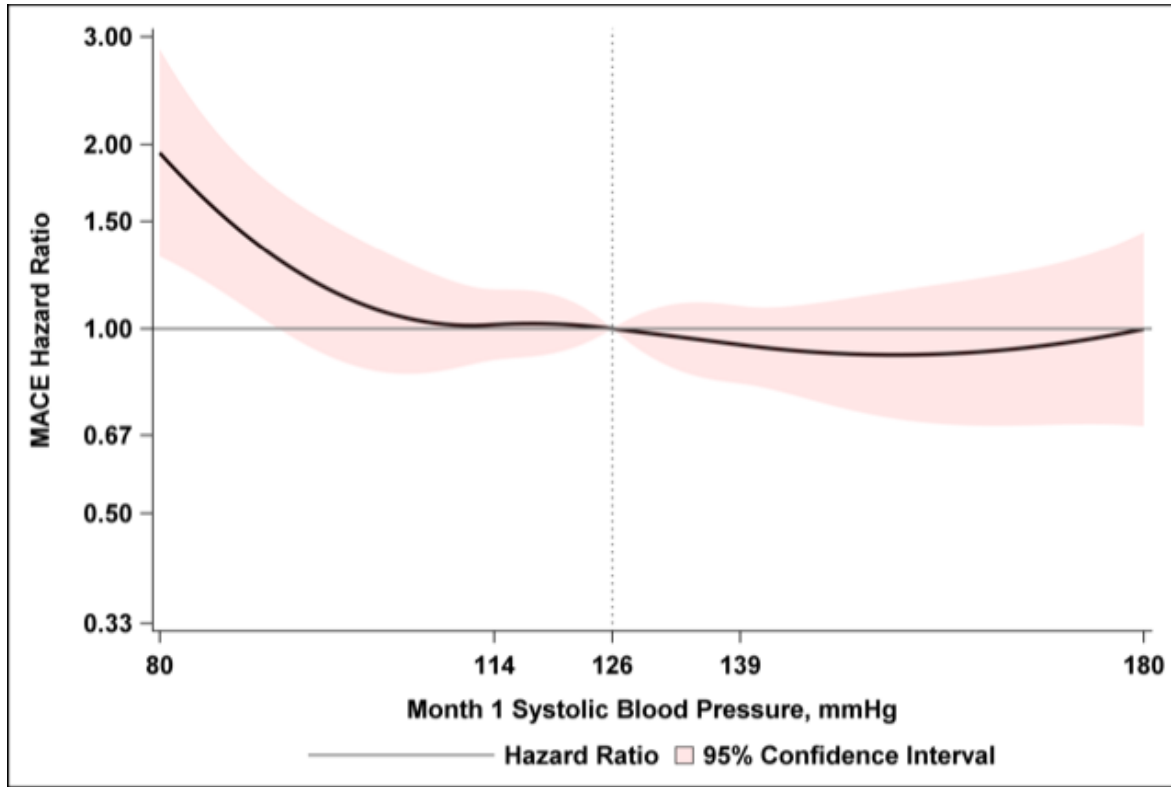
Baseline BP to include screening and randomization visits.

Avg BP at 1 month following LER used to assess risk for MACE and MALE

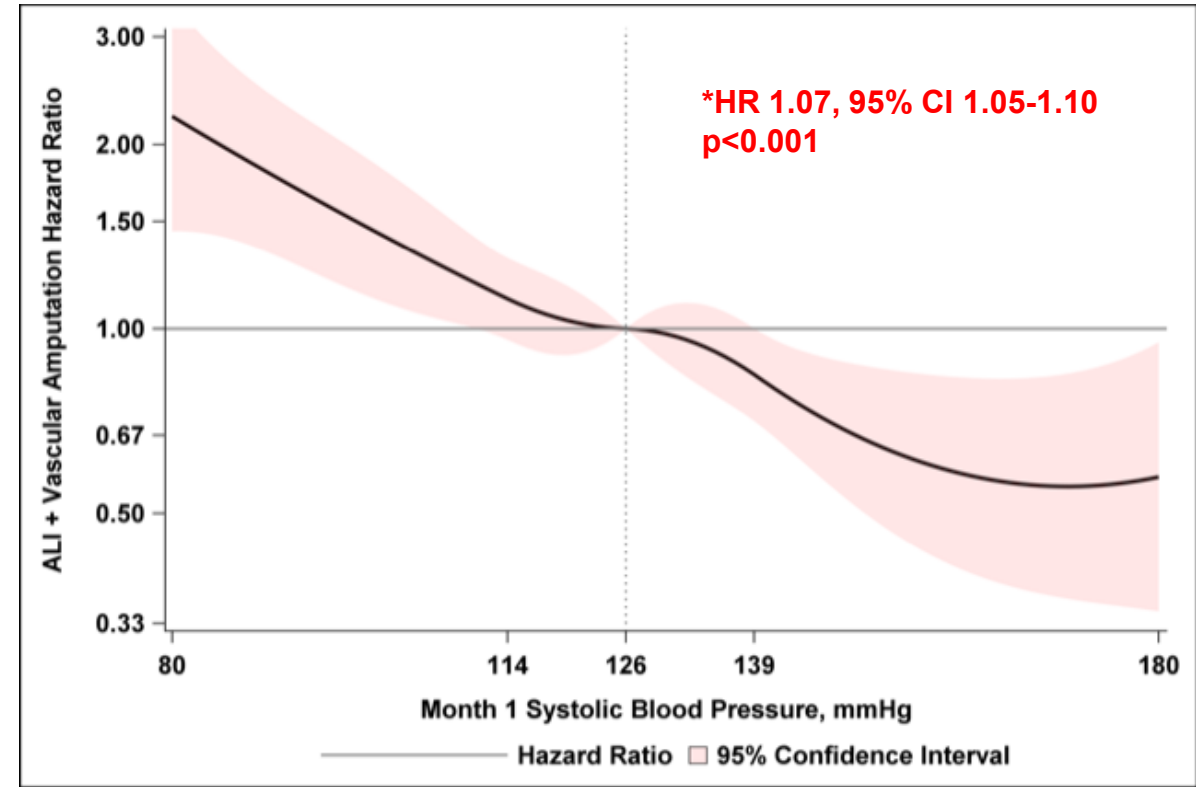
Follow up BP at 3, 6, 12, and every 6 months after LER
- Median follow up 28 months

Primary Composite Endpoint: *Time to first event of MACE or MALE.*

Risk of MACE and MALE by SBP 1 Month After LER



Risk of MACE based on SBP 1 month following LER

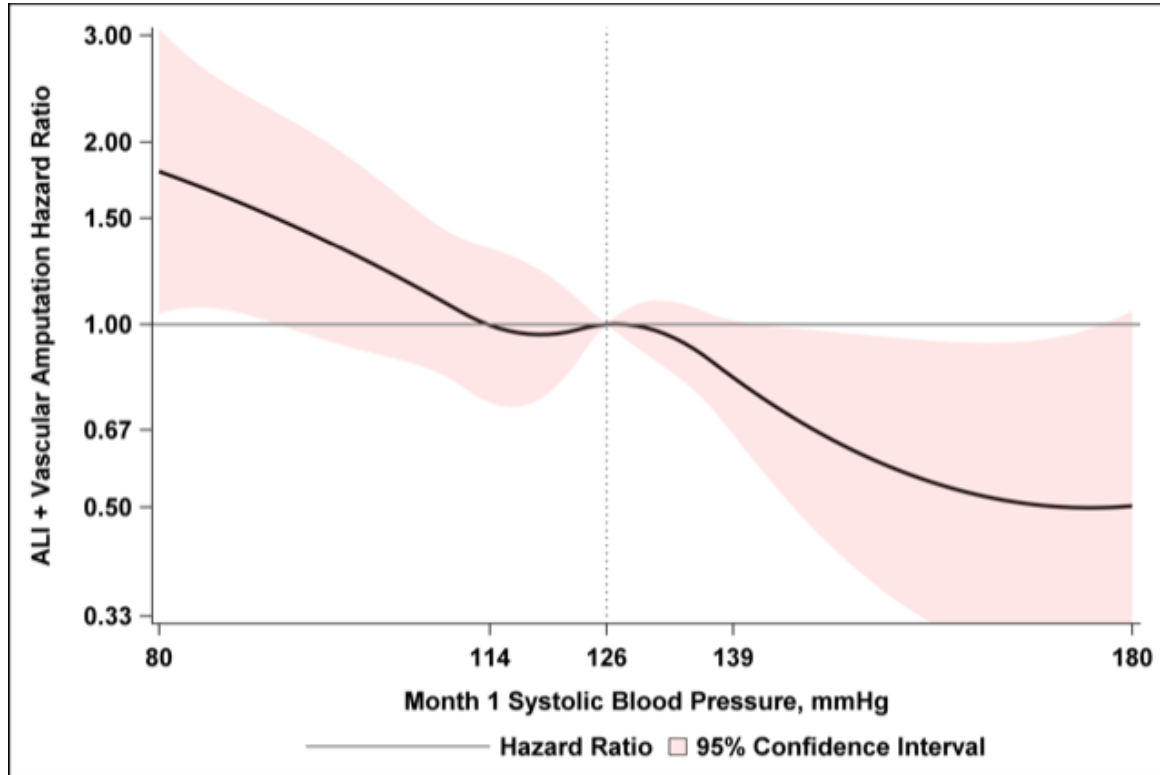


Risk of MALE based on SBP 1 month following LER

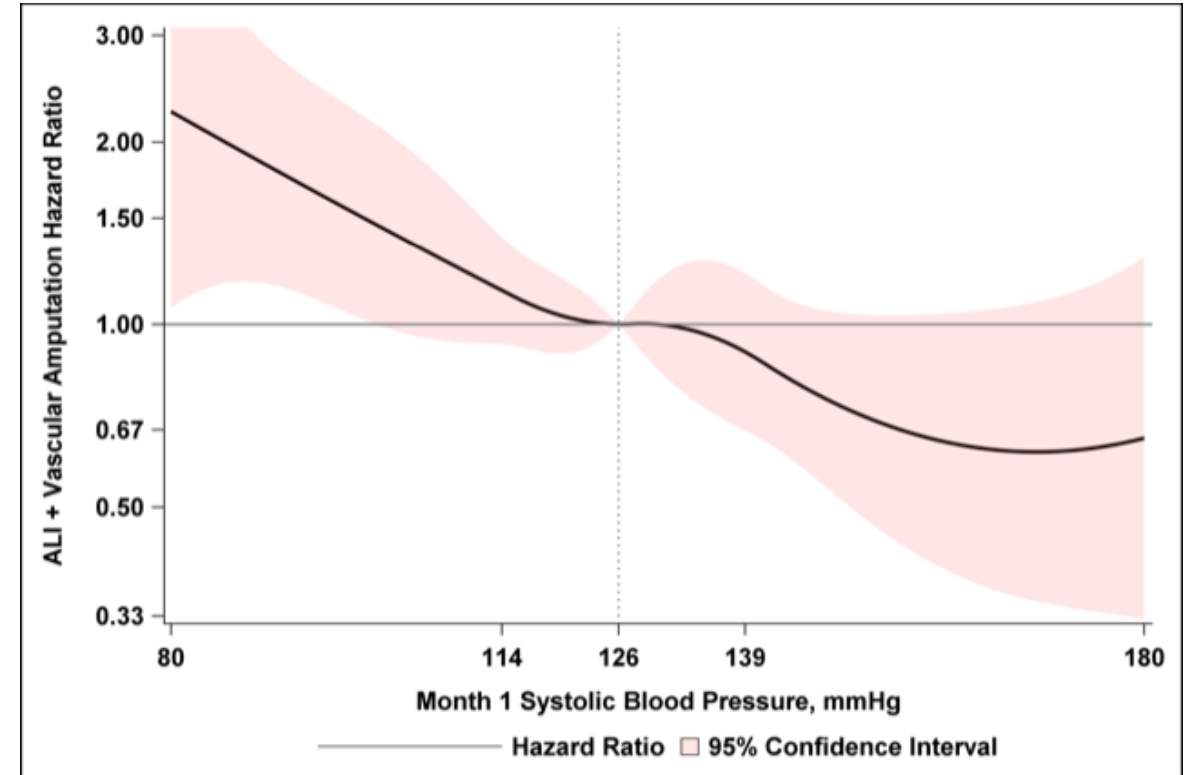
**Splines estimated in proportional hazard models with adjustment for treatment assignments. Not adjusted for other possible confounders.*

***Every 5mmHg decrease in SBP <120mmHg is associated with 7% increase of MALE**

Risk of MALE by SBP 1 Month After LER Stratified by Index Revascularization Type



Risk of MALE based on SBP 1 month following **Surgical** LER



Risk of MALE based on SBP 1 month following **Endovascular** LER

Summary & Conclusions

- **Patients with PAD are at an increased risk of MALE**
- **An inverse relationship between systolic blood pressure at 1 month following LER and risk for MALE was observed, consistent with analyses from ALLHAT**
- **The pattern appeared consistent regardless of index revascularization type**
- **Further investigation is needed to determine whether the higher rates of MALE that were associated with lower systolic blood pressures was independent of other risk factors and whether there is a true causal relationship between BP and MALE in PAD**

THANK YOU!

