

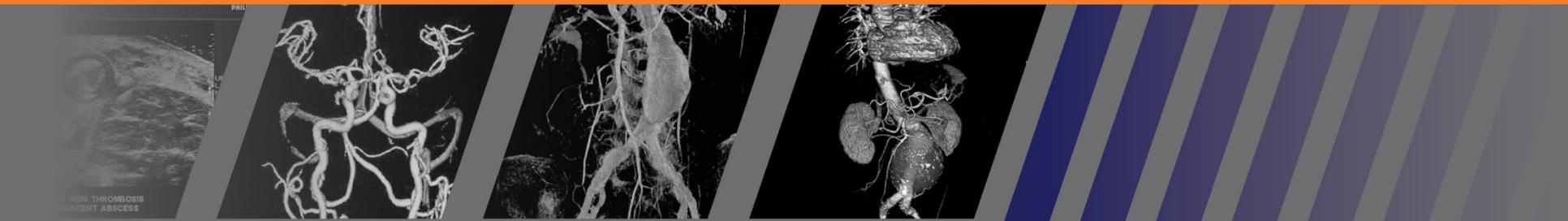
2019 MID-ATLANTIC CONFERENCE

9th ANNUAL CURRENT CONCEPTS IN VASCULAR THERAPIES

2019

Hilton Virginia Beach Oceanfront
Virginia Beach, Virginia

MAY 2-4



2019 MID-ATLANTIC CONFERENCE

9th ANNUAL CURRENT CONCEPTS IN **VASCULAR THERAPIES**

2019



Deepak N.Deshmukh DO

May 3, 2019

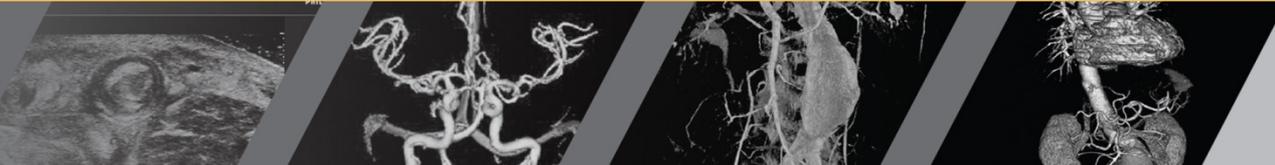
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Debate 3:

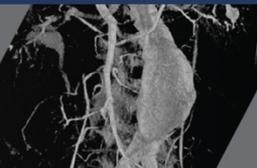
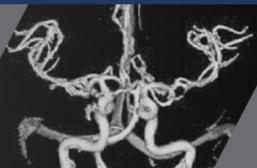
55-Year-Old Smoker with 2 Block Claudication
and SFA Occlusion Should Have Medical Therapy
Only

Disclosures

- None



LET'S GET READY TO RUMBLE!!!!

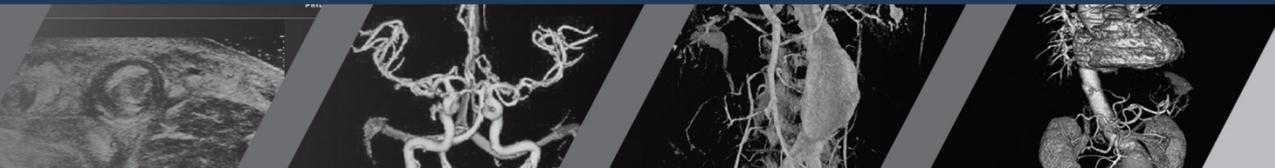


THERE CAN ONLY BE ONE WINNER!



The Debate

- 55 yo Smoker with 2 Block Claudication should be treated Medically only



- Claudication

- Reproducible discomfort of a defined group of muscles that is induced by ambulation and relieved by rest
- Imbalance between Supply and Demand for Blood Flow



Introduction

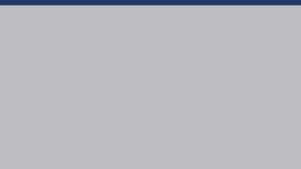
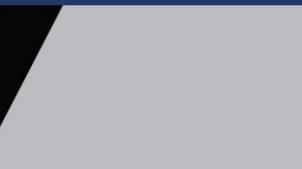
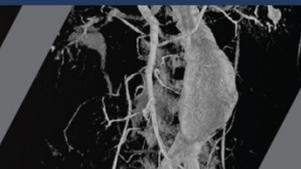
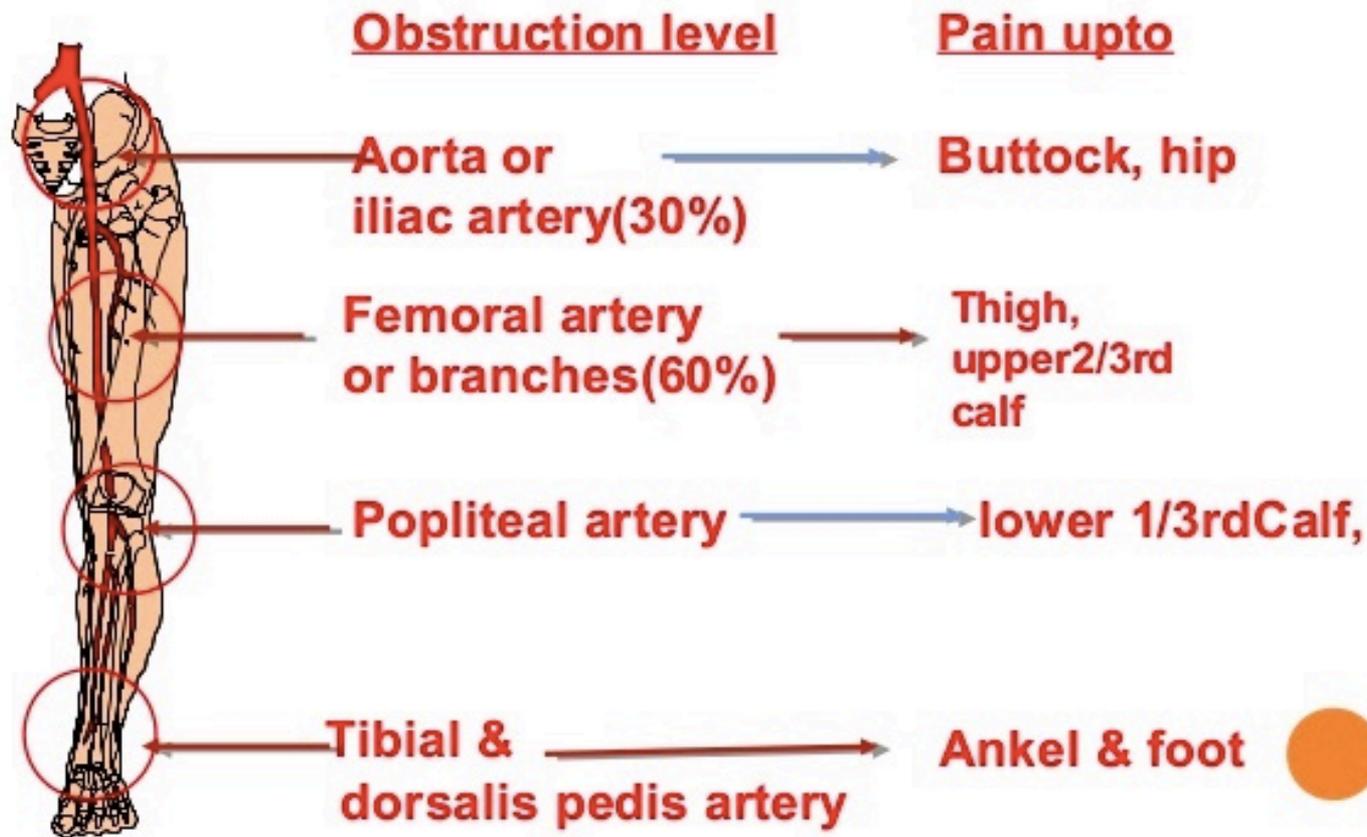
- Age
- Co-morbidities
- Daily Activities and Limitations
- Severity of Symptoms
- Location and extent of Disease



Fontaine classification		Rutherford classification	
Stage	Symptoms	Category	Symptoms
I	Asymptomatic	0	Asymptomatic
II	Intermittent claudication	1	Mild claudication
		2	Moderate claudication
		3	Severe claudication
III	Ischemic rest pain	4	Ischemic rest pain
IV	Ulceration or gangrene	5	Ischemic ulceration (minor tissue loss)
		6	Ischemic gangrene (major tissue loss)



Level of Claudication according to the site of obstruction



Non-Surgical/Interventional Approach

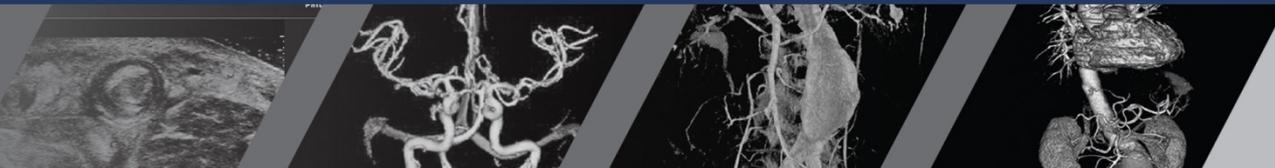
- Systemic disease of Atherosclerosis
- Risk Factor Modification
- Exercise Therapy (ideally supervised)
- Pharmacologic Therapy



- Periodic Re-evaluation to determine the effectiveness of these therapies



- PAD and severity important marker for cardiovascular risk
- Low risk for progression to limb-threatening lower extremity ischemia
- Most patients remain stable particularly if they stop smoking



- Stable claudication
 - 70-80%
- Worsening claudication
 - 10-20%
- Progression to CLI
 - 1-2%



Initial Steps

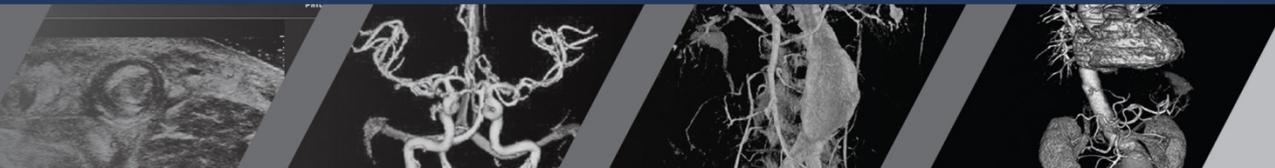
- Smoking Cessation
- Hypertension
- BMI
- Statin Therapy
- Antiplatelet Therapy



Smoking Cessation

- Smoking Cessation

- Pharmacotherapy – Chantix, Bupropion
- Behavior modification
- Referral to smoking cessation program – Ask, Advise, Assess, Assist and Arrange
- Rest pain did not occur in patients who stopped smoking but developed in 16-20% of patients who continued to smoke



Smoking cessation

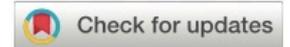
- Continued Smoking
 - Restricts improvements in pain-free walking symptoms – with exercise program
 - Less likely to benefit from pharmacologic therapy



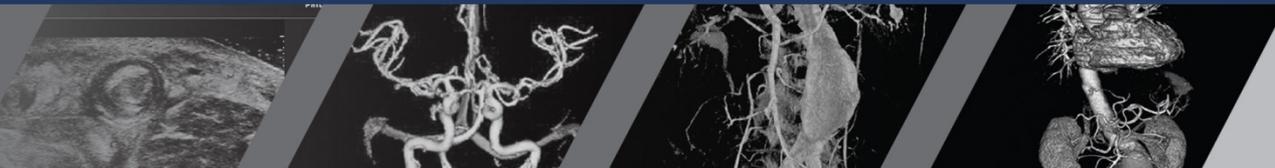
Editors' Choice

From the Society for Vascular Surgery

Active smoking in claudicants undergoing lower extremity bypass predicts decreased graft patency and worse overall survival



Douglas W. Jones, MD,^a Philip P. Goodney, MD, MS,^{b,c} Jens Eldrup-Jorgensen, MD,^d Marc L. Schermerhorn, MD,^e Jeffrey J. Siracuse, MD,^a Jeanwan Kang, MD,^b Jesse A. Columbo, MD,^b Bjoern D. Suckow, MD,^b and David H. Stone, MD,^b for the Vascular Study Group of New England, *Boston, Mass; Lebanon and Hanover, NH; and Portland, Me*



- Vascular Study Group of New England
- 2003-2016
- 1789 LEBs
 - 54% Non-smokers
 - 46% Smokers (younger with fewer co-morbidities)
- 2 year follow up
 - Smokers inferior primary patency rates (48% vs 61% $p=0.3$) Assisted primary patency rates (59% vs. 74% $p=0.1$)



Medical Therapy

- Cilastozol - Beneficial
 - Phosphodiesterase inhibitor
 - Suppress platelet aggregation and a direct arterial vasodilator
 - 100 mg PO BID

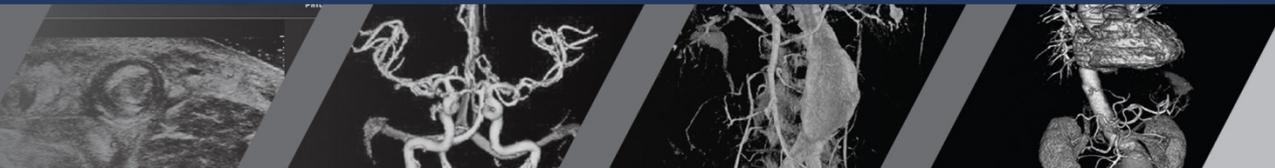


Effect of Cilostazol on Treadmill Walking, Community-Based Walking Ability, and Health-Related Quality of Life in Patients with Intermittent Claudication Due to Peripheral Arterial Disease: Meta-Analysis of Six Randomized Controlled Trials

Judith G. Regensteiner, PhD, John E. Ware, Jr, PhD,† Walter J. McCarthy, MD,‡
Peter Zhang, PhD,§ William P. Forbes, PharmD,§ Jeffrey Heckman, BS,§
and William R. Hiatt, MD**

Cilostazol was associated with greater improvements in community based walking ability and Health-related quality of life (HQL) in patients

- J Am Geriatr Soc 2002;50:1939-46



Medical Therapy

- Naftidrofuryl - Beneficial
 - Europe
 - Fewer side effects
 - 5-hydroxytryptamine-2-receptor antagonist
 - Promotes glucose uptake and increase ATP levels
 - Increase MWD 60% compared to placebo
 - PFWD Increase 49% compared to placebo



Exercise Therapy

- Increased calf blood flow
- Improved endothelial function/endothelial dependent vasodilation
- Reduced local inflammation by decreasing free radicals
- Induction of vascular angiogenesis
- Improved mitochondrial and muscle function and muscle metabolism
- Reduced red cell aggregation and blood viscosity

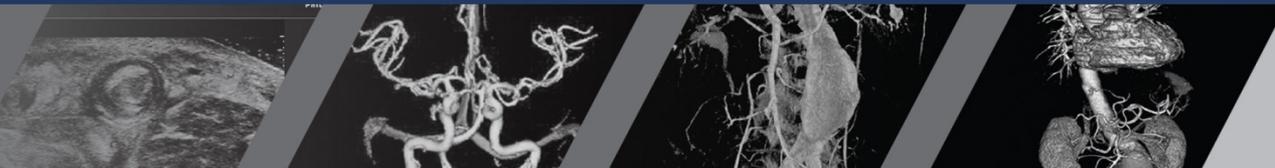


Exercise Therapy

- CLEVER (Claudication:Exercise Vs. Endoluminal Revascularization)
 - Supervised Exercise Program improved treadmill walking performance more than endovascular revascularization for Aorto-iliac disease



- Functional improvements with
 - Medical Therapy + Exercise
 - MORE DURABLE THAN PERCUTANEOUS INTERVENTION AS AN INITIAL TREATMENT STRATEGY



Is percutaneous transluminal angioplasty better than exercise for claudication? Preliminary results from a prospective randomised trial.

Creasy TS¹, McMillan PJ, Fletcher EW, Collin J, Morris PJ.

⊕ Author information

Abstract

Percutaneous transluminal angioplasty (PTA) is a commonly performed procedure for the treatment of intermittent claudication despite the lack of controlled studies. The aim of this study was to compare PTA with supervised exercise therapy for patients with arterial occlusive disease judged suitable for PTA at angiography. Patients were assessed before treatment commenced and at three monthly intervals afterwards. Assessment included measurement of resting ankle brachial pressure indices (ABPI), and claudicating and maximum walking distances on a treadmill up a 10 degrees incline. Twenty patients were randomised to receive PTA and 16 exercise. The groups were similar in age, sex, smoking habits and arteriographic pattern of disease. In the PTA group two patients had angioplasties that were technically unsuccessful and two other patients subsequently required surgery. One patient in the exercise group subsequently had a PTA. After PTA, mean ABPI were significantly improved at 3, 6 and 9 months (P less than 0.01) without a corresponding significant increase in mean maximum walking distances. However in the exercise group despite no increase in mean ABPI, mean maximum walking distances increased progressively, with significant increases at 6, 9 and 12 months (P less than 0.01).

PMID: 2140007

PTA – mean ABI improved without increase in MWD
SET – ABI without change – MWD did increase



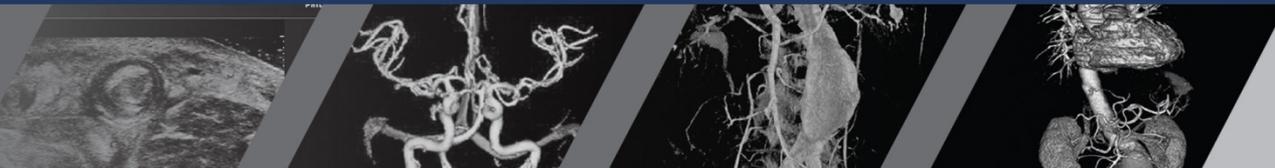
- Trials from 1996-2015 -CLEVER and ERASE trials
 - Supervised Exercise Therapy(SET)
 - Endovascular Intervention (PTA)
 - Medical Therapy
 - Combinations
- SET +PTA →greatest change in walking distance
- QoL improvements



- SET alone vs. PTA/S alone
 - 10 trials
 - No differences in exercise capacity (max walking distance(MWD) or pain free walking distance(PFWD))
 - No difference in future revascularization or amputation



- PTA/S vs. Advice to Exercise
 - MWD and PFWD improved for PTA/S group in short term – 90 days
 - Long term follow up did not show differences



Long-term clinical effectiveness of supervised exercise therapy versus endovascular revascularization for intermittent claudication from a randomized clinical trial.

Fakhry F¹, Rouwet EV, den Hoed PT, Hunink MG, Spronk S.

+ Author information

Abstract

BACKGROUND: Long-term comparisons of supervised exercise therapy (SET) and endovascular revascularization (ER) for patients with intermittent claudication are scarce. The long-term clinical effectiveness of SET and ER was assessed in patients from a randomized trial.

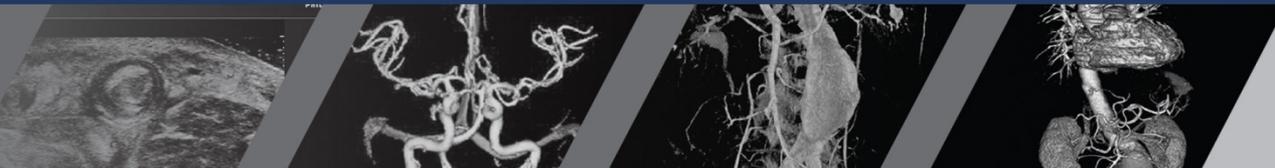
METHODS: Consenting patients with intermittent claudication were assigned randomly to either SET or ER. Outcome measures on functional performance (pain-free and maximum walking distance, ankle : brachial pressure index), quality of life (QoL) and number of secondary interventions were measured at baseline and after approximately 7 years of follow-up. Repeated-measurement and Kaplan-Meier methods were used to analyse the data on an intention-to treat-basis.

RESULTS: A total of 151 patients were randomized initially to either SET or ER. After 7 years, functional performance ($P < 0.001$) and QoL ($P \leq 0.005$) had improved after both SET and ER. Long-term comparison showed no differences between the two treatments, except in the secondary intervention rate, which was significantly higher after SET ($P = 0.001$). Nevertheless, the total number of endovascular and surgical interventions (primary and secondary) remained higher after ER ($P < 0.001$).

CONCLUSION: In the longer term, SET-first or ER-first treatment strategies were equally effective in improving functional performance and QoL in patients with intermittent claudication. The substantially higher number of invasive interventions in the ER-first group supports a SET-first treatment strategy for intermittent claudication.

REGISTRATION NUMBER: NTR199 (<http://www.trialregister.nl>).

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- **SET vs SET + PTA/S**
 - No clear diff. between groups for MWD or PFWD
- **Randomized clinical trial of percutaneous transluminal angioplasty, supervised exercise and combined treatment for intermittent claudication due to femoropopliteal arterial disease**
 - F. A. K. Mazari, J. A. Khan, D. Carradice, N. Samuel, M. N. A. Abdul Rahman, S. Gulati, H. L. D. Lee, T. A. Mehta, P. T. McCollum and I. C. Chetter
 - Ann of Vascular Surgery 2010 Jan;24(1):69-79
 - 178 patients – long term follow up to 7 years (mean 5.2)
- **PTA/S higher ABI but...**
- **No significant differences were observed between the groups for treadmill walking distances, restenosis rates, new ipsi- or contralateral lesions or QoL outcomes**



Criteria for Intervention

- Significant disability from Claudication
- Patient has not had or is not predicted to have an adequate response to Exercise rehabilitation and pharmacologic therapy
- Characteristics of the lesion permit appropriate intervention at low risk with a high likelihood of initial and long term success
- The patient is able to benefit from an improvement in claudication



Complications of intervention

- May worsen symptoms
- In-stent restenosis
- Stent fracture
- Vessel or graft thrombosis
- Infection
- Embolization



Conclusion

- Non-interventional and Non-surgical therapies should not be first line therapies when addressing claudication in an actively smoking relatively young patient
- First modalities should be directed to smoking cessation along with cardiovascular risk factor management and a preferably supervised exercise/walking program



Thank You

- Questions?

