

Latest PAT Publications



A double-blind, crossover study of Doxazosin and Enalapril on peripheral vascular tone and nocturnal blood pressure in sleep apnea patients.

Zou D, Grote L, Eder DN, Radlinski J, Hedner J.
Sleep Med. 2010 Mar;11(3):325-8

Compared Doxazosin (DO - peripheral alpha-receptor inhibitor) and Enalapril (EN, - ACE inhibitor), on PAT and nocturnal blood pressure (BP) in 16 hypertensive OSA patients. Full-night polysomnography, PAT, beat-to-beat finger BP (Finapres), 24 H ambulatory BP, and nighttime BP and PAT associated with apneas were tested at the end of each treatment period.

Results: No differences between treatments in 24h BP profile and OSA severity. Nighttime finger BP was significantly higher under DO. PAT ratio during apnea increased 5.3% under DO vs. EN ($P < 0.0001$). Apnea desaturation was associated with a 0.9% decrease in PAT ratio/-1% SaO₂ ($P < 0.0001$). REM sleep was associated with 2.2% decrease of PAT ratio vs. NREM sleep ($P = 0.002$).

Conclusions: Digital vasoconstrictions associated with apneas are alpha-receptor mediated. DO has a poorer effect on nocturnal BP control in OSA patients than EN.

<http://www.ncbi.nlm.nih.gov/pubmed/20171140>



Relation of brachial and digital measures of vascular function in the community: the Framingham heart study.

Hamburg NM, Palmisano J, Larson MG, Sullivan LM, Lehman BT, Vasan RS, Levy D, Mitchell GF, Vita JA, Benjamin EJ.
Hypertension. 2011 Mar;57(3):390-6

Noninvasively compared vasodilator function in the brachial artery - (FMD, $n = 7031$; age 48 ± 13 , 54% women), and digital arteries using EndoPAT- (PAT ratio, $n = 4352$; age 55 ± 16 , 51% women), in Framingham Offspring, Third Generation and Omni Cohorts.

Abnormality thresholds were defined respectively as the sex-specific fifth percentile in a reference group free of conventional cardiovascular risk factors.

Results: Abnormal FMD but not PAT ratio prevalence increased with age and higher systolic blood pressure. Higher BMI was associated with increased abnormality prevalence in both. Abnormal PAT ratio correlates included lower systolic blood pressure, increasing total/high-density lipoprotein cholesterol ratio, diabetes, smoking, and lipid-lowering medication. In 1,843 concurrent tests, PAT ratio and FMD were not significantly associated.

Conclusions: FMD and PAT ratio might provide distinct information regarding vascular function in conduit versus smaller digital vessels.

<http://www.ncbi.nlm.nih.gov/pubmed/21263120>



Effects of cranberry juice consumption on vascular function in patients with coronary artery disease.

Mustali M Dohadwala, Monika Holbrook, Naomi M Hamburg, Sherene M Shenouda, William B Chung, Megan Titas, Matthew A Kluge, Na Wang, Joseph Palmisano, Paul E Milbury, Jeffrey B Blumberg, and Joseph A Vita.
Am J Clin Nutr. 2011 May;93(5):934-40

Examined the effects of cranberry juice on vascular function in patients with coronary artery disease in an acute pilot study with no placebo ($n = 15$), and in a chronic placebo-controlled crossover study ($n = 44$), before and after active and control beverages, and at ≥ 12 h after the last beverage.

Results: Mean carotid-femoral pulse wave velocity decreased after active juice vs. placebo ($P = 0.003$), but not Brachial FMD, EndoPAT index, blood pressure, or carotid-radial pulse wave velocity. In the pilot study, brachial FMD improved ($P = 0.01$), as did EndoPAT index ($P = 0.001$), 4 h after active juice.

Conclusions: Chronic cranberry juice reduced carotid femoral pulse wave velocity. The uncontrolled pilot study suggested an acute but not chronic benefit on endothelial function.

<http://www.ncbi.nlm.nih.gov/pubmed/21411615>



Effect of periodontal treatment on circulating CD34(+) cells and peripheral vascular endothelial function: a randomized controlled trial.

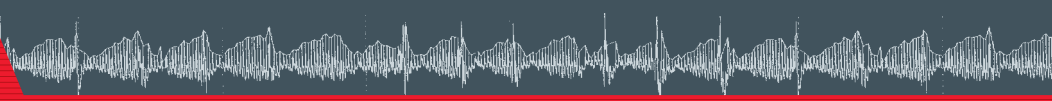
Li X, Tse HF, Yiu KH, Li LS, Jin L.
J Clin Periodontol. 2011 Feb;38(2):148-56

Investigated the effect of periodontal treatment on circulating progenitor cell (CPC) count and vascular endothelial function in moderate-to-severe chronic Periodontitis in 25 patients assigned to 3 month of treatment, and 25 untreated controls. CPCs and endothelial function using EndoPAT2000 were evaluated at baseline and 3-month follow-up.

Results: Periodontal treatment exhibited neutral effects on endothelial function while Circulating CD34(+) cells count significantly decreased in the Treatment group, $p = 0.011$.

Conclusions: Treatment of Periodontitis has neutral effects on peripheral endothelial function but significantly decreases circulating CD34(+) cell count.

<http://www.ncbi.nlm.nih.gov/pubmed/21133981>



Latest PAT Publications



Impaired vascular function in asymptomatic young adult survivors of Hodgkin Lymphoma following mediastinal radiation.

*Zelcer S, Chen B, Mangel J, Vujovic O, Thiessen-Philbrook HR, Reider M, Mahmud FH.
J Cancer Surviv. 2010 Sep; 4(3):218-24*

Evaluated endothelial function (EndoPAT2000), cardiovascular risk factors, and activity level in 26 Hodgkin lymphoma survivors (HLS) aged 12-30, (>2 years from therapy) vs. 26 matched controls, and also determined the influence of mediastinal radiation.

Results: HLS were on average 6.7±4.6 yrs post treatment. No differences in endothelial function or cardiovascular risk factors were observed between HLS and control groups, but endothelial function was impaired in those HLS who received mediastinal radiation (n=13), vs. controls (1.67±0.39 vs. 2.03±0.37, p<0.01).

Conclusions: Impaired endothelial function was preferentially observed in HLS who received mediastinal radiation, confirming that mediastinal radiation is an additional cardiovascular risk factor in this young patient cohort.

<http://www.ncbi.nlm.nih.gov/pubmed/20652436>



Modified-release sildenafil reduces Raynaud's phenomenon attack frequency in limited cutaneous systemic sclerosis.

*Herrick AL, van den Hoogen F, Gabrielli A, Tamimi N, Reid C, O'Connell D, V-zquez-Abad MD, Denton CP.
Arthritis Rheum. 2011 Mar;63(3):775-82*

Examined the effect of sildenafil in 57 patients with Raynaud's phenomenon (RP) secondary to limited cutaneous systemic sclerosis (lcSSc), randomized to modified-release sildenafil 100 mg once daily for 3 days followed by modified-release sildenafil 200 mg once daily for 25 days or placebo. Primary end point was percentage change in weekly RP attacks; secondary end points included Raynaud's Condition Score, duration of attacks, RP pain score, endothelial dysfunction (EndoPAT2000), and serum biomarkers.

Results: Mean percentage reduction in attacks per week was greater for modified-release sildenafil than for placebo (-44.0% vs. -18.1%, P = 0.034); while secondary end points were similar between groups. **Conclusions:** Modified-release sildenafil reduced attack frequency in patients with RP secondary to lcSSc and may thus be a treatment option.

<http://www.ncbi.nlm.nih.gov/pubmed/21360507>



Increased arterial stiffness in patients with psoriasis is associated with active systemic inflammation.

*Yiu KH, Yeung CK, Chan HT, Wong RM, Tam S, Lam KF, Yan GH, Yue WS, Chan HH, Tse HF.
Br J Dermatol. 2011 Mar;164(3):514-20*

Investigated the relationship between disease activity, systemic inflammation, macrovascular and microvascular function in 52 patients with psoriasis, vs. 50 matched controls. Baseline demographics, hs-CRP, Psoriasis Area and Severity Index (PASI), arterial stiffness and endothelial function were assessed using brachial - ankle pulse wave velocity (baPWV) and EndoPAT index.

Results: Patients with psoriasis had significantly higher hs-CRP (P<0.01) and baPWV, (P< 0.01) but did not differ in their EndoPAT index vs. controls. There was significant correlation of hs-CRP with baPWV (r=0.51, P< 0.01) and with PASI (r=0.48, P< 0.01).

Conclusions: Young patients with psoriasis have increased arterial stiffness but not microvascular dysfunction compared with healthy controls.

<http://www.ncbi.nlm.nih.gov/pubmed/21039409>



Plasma leptin levels and digital pulse volume in obese patients without metabolic syndrome - A pilot study.

*Lin YH, Ho YL, Lee JK, Huang HL, Huang KC, Chen MF.
Clin Chim Acta. 2011 Apr 11;412(9-10):730-4*

Assessed the relationship among endothelial dysfunction (EndoPAT2000), anthropometric indices, adipokines and inflammatory cytokines in 35 obese patients without metabolic syndrome, 11 of whom had been diagnosed with endothelial dysfunction.

Results: There was a significant difference of ln leptin (p=0.007), ln [leptin/visceral fat thickness] (p=0.004) and ln [leptin/subcutaneous fat thickness] (p<0.001) between patients with and without endothelial dysfunction. ln [leptin/subcutaneous fat thickness] was significantly related to the ln (PAT ratio) (p=0.002). Using ln [leptin/subcutaneous fat thickness] to detect endothelial dysfunction provided area under ROC curve of 0.843 (p=0.002).

Conclusions: Abnormal digital vascular function occurs in obese patients without metabolic syndrome. Low plasma leptin/subcutaneous fat ratio is associated with endothelial dysfunction in this population.

<http://www.ncbi.nlm.nih.gov/pubmed/21195702>

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Booth # 209

APSS
25th Anniversary Meeting of the
Associated Professional Sleep Society
June 13th – 15th, 2011
Minneapolis, MN, USA
Booth # 451

NYC College of Dentistry
June 17th – 18th, 2011
New York

ADA
American Diabetes Association
71ST Scientific sessions
June 24th – 28th, 2011
San Diego, CA, USA
Booth # 2302

Dental Writer
July 8 -9
Jupiter, Florida

AACP Annual Symposium
July 29 – 30
Baltimore, MD

IN Annual Sleep Meeting
August 18 – 19
Indianapolis

ESC
European Society of Cardiovascular
August 27 – 31, 2011
Paris Nord Villepinte
Paris, France
Booth # b320

Spotlight on

Joseph A. Vita, M.D.



Dr. Joseph A. Vita is a Professor of Medicine at Boston University School of Medicine and a Senior Cardiologist in the Section of Cardiovascular Medicine. His research focuses on vascular biology and inflammation, and particularly on endothelial dysfunction in atherosclerosis and associated risk factors, mechanisms of endothelial dysfunction in diabetes mellitus and obesity, and the effects of drug, lifestyle, and dietary interventions on endothelial function.

Dr. Vita's research is supported by several grants from the NIH and by industry, and he is the principal investigator of an NIH Vascular SCCOR grant, and is the director of an NIH K12 Vascular Medicine training program. Dr. Vita currently serves as the Deputy Editor of Circulation.

Dr. Vita has been involved in several groundbreaking studies which have significantly advanced the scientific base and clinical acceptance of EndoPAT, including the following:

Effects of cranberry juice consumption on vascular function in patients with coronary artery disease. *Mustali M Dohadwala, Monika Holbrook, Naomi M Hamburg, Sherene M Shenouda, William B Chung, Megan Titas, Matthew A Kluge, Na Wang, Joseph Palmisano, Paul E Milbury, Jeffrey B Blumberg, and Joseph A Vita.* Am J Clin Nutr. 2011 May;93(5):934-40.

Vascular Function to Cardiovascular Risk Factors in the Framingham Heart Study. *Naomi M. Hamburg, Michelle J. Keyes, Martin G. Larson, Ramachandran S. Vasan, Renate Schnabel, Moria M. Pryde, Gary F. Mitchell, Jacob Sheffy, Joseph A. Vita, Emelia J. Benjamin* Cross-Sectional Relations of Digital Circulation 2008; 117(19): 2467-2474.

Cardiovascular risk factors in the community: The Framingham Heart Study. *N. Hamburg, M.J. Keyes, M.G. Larson, R.S. Vasan, R. Schnabel, M.M. Pryde, J.A. Vita, E.J. Benjamin.* Digital microvascular function is related to Circulation 2007; 116: II_846.

Relation of Cardiovascular Risk Factors with Abnormal Brachial and Digital Vascular Function in the Community: The Framingham Heart Study. *NM Hamburg, J Palmisano, L M Sullivan, M G Larson, M J Keyes, G F Mitchell, R S Vasan, J A Vita, E J Benjamin.* Circulation 9002; 021 (Suppl.): S364

Chronic Study of the Effect of Grape Seed Extract plus Ascorbic Acid on Endothelial Function in Patients with Coronary Artery Disease. *NM Hamburg, M Holbrook, W Chung, T Caiano, MA Duess, M Kluge, V Chernyshev, C Tabit, T McKinnon, T Wood, J Cuomo, B Dixon, N Eich, JA Vita.* AHA EPINPAM meeting 0102