Sudden Onset Cold Painful Leg
EVIDENCE TABLE

Reference	Study Type	Patients/ Events	Study Objective (Purpose of Study)	Study Results	Strength of Evidence
1. Schindler N, Calligaro KD, Lombardi J, Dougherty MJ, Raviola CA, D'Orazio E. Has arteriography gotten a bad name? Current accuracy and morbidity of diagnostic contrast arteriography for aortoiliac and lower extremity arterial disease. *Ann Vasc Surg* 2001; 15(4):417-420.	10	244 cases	Analysis to determine if contrast arteriography is the diagnostic test of choice for lower extremity arterial disease.	Contrast arteriography has low morbidity and remains the diagnostic test of choice for lower extremity arterial disease.	2
2. Hentsch A, Aschauer MA, Balzer JO, et al. Gadobutrol-enhanced moving-table magnetic resonance angiography in patients with peripheral vascular disease: a prospective, multi-centre blinded comparison with digital subtraction angiography. *Eur Radiol* 2003; 13(9):2103-2114.	9	203	Prospective, multi-centre study to assess the accuracy of moving table MRA compared to digital subtraction angiography (DSA) in peripheral vascular disease.	MRA was adequate for the detection of significant stenosis in pelvic and thigh arteries but was significantly limited in the evaluation of more distal vasculature.	1
3. Loewe C, Schoder M, Rand T, et al. Peripheral vascular occlusive disease: evaluation with contrast-enhanced moving-bed MR angiography versus digital subtraction angiography in 106 patients. *AJR* 2002; 179(4):1013-1021.	9	106	Retrospective study to compare contrast enhanced moving table MRA to digital subtraction angiogram in patient's with peripheral vascular occlusive disease.	MRA is accurate and practical modality to evaluate peripheral vascular disease.	2
4. Deutschmann HA, Schoellnast H, Portugaller HR, et al. Routine use of three-dimensional contrast-enhanced moving-table MR angiography in patients with peripheral arterial occlusive disease: comparison with selective digital subtraction angiography. *Cardiovasc Intervent Radiol* 2006; 29(5):762-770.	9	38	To compare 3-Dcontrast-enhanced MRA with DSA in patients with peripheral arterial occlusive disease.	MRA demonstrated good specificity and sensitivity for detection of stenosis in patients with peripheral occlusive diseases.	3
5. Huegli RW, Aschwanden M, Bongartz G, et al. Intraarterial MR angiography and DSA in patients with peripheral arterial occlusive disease: prospective comparison. *Radiology* 2006; 239(3):901-908.	10	20	To prospectively evaluate the feasibility of intra-arterial MRA in the depiction of significant stenoses and occlusions.	Intra-arterial MRA is an accurate method used to depict significant stenoses and occlusions in lower extremity arteries with a low-dose injection protocol.	3
6. Ruehm SG, Nanz D, Baumann A, Schmid M, Debatin JF. 3D contrast-enhanced MR angiography of the run-off vessels: value of image subtraction. *J Magn Reson Imaging* 2001; 13(3):402-411.	10	23	Assess the utility of implementing subtracted and non-subtracted MRA using DSA as a standard of reference.	MRA is highly accurate in the evaluation of peripheral vascular disease and subtracted images did not significantly improve the accuracy of MRA.	3

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7. Sueyoshi E, Sakamoto I, Matsuoka Y, Hayashi H, Hayashi K. Symptomatic peripheral vascular tree stenosis. Comparison of subtracted and nonsubtracted 3D contrast-enhanced MR angiography with fat suppression. *Acta Radiol* 2000; 41(2):133-138.	10	13	To determine the feasibility of contrast enhanced MRA with fat saturation in patients with symptoms of lower extremity ischemia and to compare subtracted and nonsubtracted images.	MRA with fat saturation allows for the use of lower contrast with good accuracy and minimal increase in examination time in patients with lower limb ischemic disease.	3
8. Sueyoshi E, Sakamoto I, Matsuoka Y, et al. Aortoiliac and lower extremity arteries: comparison of three-dimensional dynamic contrast-enhanced subtraction MR angiography and conventional angiography. *Radiology* 1999; 210(3):683-688.	10	23	Determine the feasibility of 3-D contrast enhanced MRA in patients with lower limb ischemia.	Contrast enhanced MRA has a high sensitivity and specificity and is a feasible non-invasive screening alternative to angiography.	3
9. Swan JS, Carroll TJ, Kennell TW, et al. Time-resolved three-dimensional contrast-enhanced MR angiography of the peripheral vessels. *Radiology* 2002; 225(1):43-52.	9	69	To compare diagnostic accuracy of 3-D contrast material-enhanced MRA with conventional angiography for imaging the lower extremity vasculature.	Contrast MRA is a feasible and accurate method of evaluating peripheral vasculature.	2
10. Winterer JT, Laubenberger J, Scheffler K, et al. Contrast-enhanced subtraction MR angiography in occlusive disease of the pelvic and lower limb arteries: results of a prospective intraindividual comparative study with digital subtraction angiography in 76 patients. *J Comput Assist Tomogr* 1999; 23(4):583-589.	10	76	To determine the feasibility and clinical use of MRA for pelvic and lower limb arterial occlusive disease.	MRA was accurate at depicting the vascular tree from distal aorta through lower limb arteries suggesting its potential use as a screening tool.	2
11. Dellegrottaglie S, Sanz J, Macaluso F, et al. Technology Insight: magnetic resonance angiography for the evaluation of patients with peripheral artery disease. *Nat Clin Pract Cardiovasc Med* 2007; 4(12):677-687.	12	N/A	To review evaluation of peripheral arterial disease (PAD) with MRA.	Contrast enhanced MRA can be extremely helpful in the initial diagnosis and subsequent management of patients with PAD.	4
12. Edwards AJ, Wells IP, Roobottom CA. Multidetector row CT angiography of the lower limb arteries: a prospective comparison of volume-rendered techniques and intra-arterial digital subtraction angiography. *Clin Radiol* 2005; 60(1):85-95.	9	44	Prospective comparative study to assess whether MDCTA of the lower limb arteries, compared with conventional DSA could replace invasive arteriography in patients with symptomatic PAD.	MDCTA with 4 slice machines is insensitive to detecting significant arterial stenoses in the lower limb arteries. MDCTA is superior to DSA in its visualization of arterial territories downstream to significant occlusive disease.	3

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13. Jakobs TF, Wintersperger BJ, Becker CR. MDCT-imaging of peripheral arterial disease. *Semin Ultrasound CT MR* 2004; 25(2):145-155.	12	N/A	Reviews current status of MDCT peripheral arteriography.	Although MDCT arteriography is rapidly achieving clinical acceptance, further studies need to be performed to assess its clinical value.	4
14. Portugaller HR, Schoellnast H, Hausegger KA, Tiesenhausen K, Amann W, Berghold A. Multislice spiral CT angiography in peripheral arterial occlusive disease: a valuable tool in detecting significant arterial lumen narrowing? Eur Radiol 2004; 14(9):1681-1687.	10	50	To evaluate the potential of multislice CTA in detecting hemodynamically significant (≥70%) lesions of lower extremity inflow and runoff arteries.	Multislice CTA is helpful in detecting hemodynamically significant lesions in peripheral arterial occlusive disease. Axial CT studies yielded the most correct results, and should be reviewed. In the infrapopliteal region, exact lesion assessment remains problematic due to small vessel diameters.	3
15. Rubin GD, Schmidt AJ, Logan LJ, Sofilos MC. Multi-detector row CT angiography of lower extremity arterial inflow and runoff: initial experience. *Radiology* 2001; 221(1):146-158.	10	24	To assess the patterns of lower extremity arterial inflow and runoff opacification with four-channel multi-detector row CTA in patients with symptomatic lower extremity arterial occlusive or aneurysmal disease.	The arteries of lower extremity inflow and runoff can be reliably depicted with minimal venous enhancement by using multi-detector row CT.	3
16. Schertler T, Wildermuth S, Alkadhi H, Kruppa M, Marincek B, Boehm T. Sixteen-detector row CT angiography for lower-leg arterial occlusive disease: analysis of section width. *Radiology* 2005; 237(2):649-656.	9	17	To compare the diagnostic accuracy of CTA data with DSA in patients with occlusive PAD.	CTA has excellent diagnostic accuracy in the assessment of lower-leg PAD provided the thinnest possible section width is used.	3
17. Willmann JK, Mayer D, Banyai M, et al. Evaluation of peripheral arterial bypass grafts with multi-detector row CT angiography: comparison with duplex US and digital subtraction angiography. *Radiology* 2003; 229(2):465-474.	9	65	To assess the technical feasibility of CTA in the assessment of peripheral arterial bypass grafts and to evaluate its accuracy and reliability in the detection of graft-related complications.	CTA may be an accurate and reliable technique after duplex US in the assessment of peripheral arterial bypass grafts and detection of graft-related complications.	2
18. Krnic A, Vucic N, Sucic Z. Duplex scanning compared with intra-arterial angiography in diagnosing peripheral arterial disease: three analytical approaches. VASA 2006; 35(2):86-91.	9	60 legs	To assess the reliability of duplex scanning, as compared with DSA, in diagnosing PAD of the lower limbs.	Different duplex reliabilities in detecting significant arterial disease across lower limbs segments. Kappa values (0.35-0.64) shows duplex insufficient accuracy in grading the severity of stenosis. Weighted kappa values (0.45-0.72) confirmed duplex ability to approximate the grade of stenosis.	3
19. Leiner T, Kessels AG, Nelemans PJ, et al. Peripheral arterial disease: comparison of color duplex US and contrast-enhanced MR angiography for diagnosis. *Radiology* 2005; 235(2):699-708.	9	295	To prospectively compare the diagnostic accuracies of color duplex US and contrast material-enhanced MRA and to assess interobserver agreement regarding contrast-enhanced MRA findings in patients suspected of PAD.	Contrast-enhanced MRA is more sensitive and specific for diagnosis and pre-interventional work-up of PAD.	1

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20. Sprynger M, Fassotte C, Verhaeghe R. The ankle-brachial pressure index and a standardized questionnaire are easy and useful tools to detect peripheral arterial disease in non-claudicating patients at high risk. *Int Angiol* 2007; 26(3):239-244.	13	4536	Observational study to evaluate the prevalence of asymptomatic PAD using ankle-brachial pressure index (ABI) and questionnaire.	ABI detects PAD in a considerable number of asymptomatic patients.	1
21. Gale SS, Scissons RP, Salles-Cunha SX, et al. Lower extremity arterial evaluation: are segmental arterial blood pressures worthwhile? *J Vasc Surg* 1998; 27(5):831-838; discussion 838-839.	9	81	Comparative study to determine whether segmental arterial blood pressures are useful for lower extremity arterial evaluation.	ABIs significantly improved Doppler waveform accuracy at all levels.	2
22. American College of Radiology. *Manual on Contrast Media*. Available at: http://www.acr.org/SecondaryMainMenuCategories/quality_safety/contrast_manual.aspx.	15	N/A	Guidance document on contrast media to assist radiologists in recognizing and managing risks associated with the use of contrast media.	N/A	3

Evidence Table Key

Study Type Key

Numbers 1-7 are for studies of therapies while numbers 8-15 are used to describe studies of diagnostics.

1. Randomized Controlled Trial — Treatment
2. Controlled Trial
3. Observation Study
    a. Cohort
    b. Cross-sectional
    c. Case-control
4. Clinical Series
5. Case reviews
6. Anecdotes
7. Reviews

8. Randomized Controlled Trial — Diagnostic
9. Comparative Assessment
10. Clinical Assessment
11. Quantitative Review
12. Qualitative Review
13. Descriptive Study
14. Case Report
15. Other (Described in text)

Strength of Evidence Key

- Category 1 - The conclusions of the study are valid and strongly supported by study design, analysis and results.
- Category 2 - The conclusions of the study are likely valid, but study design does not permit certainty.
- Category 3 - The conclusions of the study may be valid but the evidence supporting the conclusions is inconclusive or equivocal.
- Category 4 - The conclusions of the study may not be valid because the evidence may not be reliable given the study design or analysis.