KQ1. 하지 동맥폐쇄성질환이 의심되는 환자에서 진단을 위해 영상검사가 필요한가?

출처 문헌번호	문헌정보	연구유형	대상자수	연구결과	Study quality (KCIG)
138	24. Hingorani AP, Ascher E, Marks N, Puggioni A, Shiferson A, Tran V, et al. Limitations of and lessons learned from clinical experience of 1,020 duplex arteriography. Vascular 2008;16: 147e53.	observational	906	The resultant procedures based upon DA included: bypass to the popliteal artery (262) and bypass to an infrapopliteal artery (325), endovascular procedures (363), thrombectomy (11), embolectomy (9), inflow bypass procedures to the femoral arteries (46), débridment (4), amputation (8) and no intervention (75). The areas not visualized well included: iliac (73), femoral (26), popliteal (17), and infrapopliteal (221). Additional imaging after DA was deemed necessary in 102 cases to obtain enough information to plan lower extremity revascularization. Factors associated with increased need to obtain CA included: DM (p<.001), infrapopliteal calcification (p<.001), older age (p = .01) and limb threatening ischemia (p<.001). Factors not associated with the need to obtain CA included: which technologist performed the exam, whether the technologist has a medical degree and whether the patient underwent prior revascularization.	3
138	19. Lijmer JG, Hunink MG, van den Dungen JJ, Loonstra J, Smit AJ. ROC analysis of noninvasive tests for peripheral arterial disease. Ultrasound Med Biol 1996;22:391e8.	observational	-	This study suggests that, in assessing whether a patient has significant peripheral arterial disease (lesions > or = 50%), determining an ABI is justified (ROC area 0.95 +/- 0.02). For disease localized to the aortoiliac segment, performing a single test, the femoral PI, is sufficient (ROC area 0.80 +/- 0.04). For disease including the femoropopliteal and infrapopliteal segments, a combination of tests is necessary. Utilized threshold values need to be adjusted for verification bias.	3
138	20. Dachun X, Jue L, Liling Z, Yawei X, Dayi H, Pagoto SL, et al. Sensitivity and specificity of the ankle-brachial index to diagnose peripheral artery disease: a structured review. Vasc Med 2010;15:361e9.	review	2,043	The result indicated that, although strict inclusion criteria on studies were formulated, different reference standards were found in these studies, and methods of ABI determination and characteristics of populations varied greatly. A high level of specificity (83.3-99.0%) and accuracy (72.1-89.2%) was reported for an ABI ≤ 0.90 in detecting ≥ 50% stenosis, but there were different levels of sensitivity (15-79%). Sensitivity was low, especially in elderly individuals and patients with diabetes.	1
168	250. Xu D, Zou L, Xing Y, Hou L, Wei Y, Zhang J, et al. Diagnostic value of ankle-brachial index in peripheral arterial disease: a meta-analysis. Can J Cardiol 2013;29:492e8.	metaanalysis	569	Four studies comprising 569 patients (922 limbs) met inclusion criteria. Significant heterogeneity among these studies was not detected in DOR but was evident in pooled sensitivity, specificity, PLR, and NLR. The area under the curve under the summary receiver operator curve is 0.87 (standard error = 0.02) and diagnostic accuracy (Q*) is 0.80 (standard error = 0.02). Additionally, DOR was 15.33 with corresponding 95% confidence intervals of 9.39-25.02. The pooled sensitivity and specificity of ABI ≤ 0.90 for PAD diagnosis were 75% and 86% and the pooled PLR and NLR were 4.18 and 0.29, respectively.	1
168	251. Aboyans V, Criqui MH, Abraham P, Allison MA, Creager MA, Diehm C, et al. Measurement and interpretation of the anklebrachial index: a scientific statement from the American Heart Association. Circulation 2012;126:2890e909.	review	-	-	5
168	252. Tehan PE, Santos D, Chuter VH. A systematic review of the sensitivity and specificity of the toe-brachial index for detecting peripheral artery disease. Vasc Med 2016;21:382e9.	review	-	Sensitivity of the TBI for PAD was reported in all seven studies and ranged from 45% to 100%; specificity was reported by five studies only and ranged from 16% to 100%. In conclusion, this review suggests that the TBI has variable diagnostic accuracy for the presence of PAD in specific populations at risk of developing the disease. There was a notable lack of large-scale diagnostic accuracy studies determining the diagnostic accuracy of the TBI in detecting PAD in different at-risk cohorts. However, standardised normal values need to be established for the TBI to conclusively determine the diagnostic accuracy of this test.	1
168 36	254. Met R, Bipat S, Legemate DA, Reekers JA, Koelemay MJ. Diagnostic performance of computed tomography angiography in peripheral arterial disease: a systematic review and meta-analysis. JAMA 2009;301:415e24.	metaanalysis	957	Of 909 studies identified, 20 (2.2%) met the inclusion criteria. These 20 studies had a median sample size of 33 (range, 16-279) and included 957 patients, predominantly with intermittent claudication (68%). Methodological quality was moderate. Overall, the sensitivity of CTA for detecting more than 50% stenosis or occlusion was 95% (95% confidence interval [CI], 92%-97%) and specificity was 96% (95% CI, 93%-97%). Computed tomography angiography correctly identified occlusions in 94% of segments, the presence of more than 50% stenosis in 87% of segments, and absence of significant stenosis in 96% of segments. Overstaging occurred in 8% of segments and understaging in 15%.	1
168	255. Menke J, Larsen J. Meta-analysis: accuracy of contrastenhanced magnetic resonance angiography for assessing steno-occlusions in peripheral arterial disease. Ann Intern Med 2010;153:325e34.	metaanalysis	1022	Data synthesis: The 32 included studies generally had high methodological quality. About 26% of the 1022 included patients had critical limb ischemia with pain at rest or tissue loss. Overall, the pooled sensitivity of MRA was 94.7% (95% CI, 92.1% to 96.4%) and the specificity was 95.6% (CI, 94.0% to 96.8%) for diagnosing segmental steno-occlusions. The pooled positive and negative likelihood ratios were 21.56 (CI, 15.70 to 29.69) and 0.056 (CI, 0.037 to 0.083), respectively. Magnetic resonance angiography correctly classified 95.3%, overstaged 3.1%, and understaged 1.6% of arterial segments. Limitation: Similar to most studies of computed tomographic angiography in PAD, the primary studies reported the diagnostic accuracy of MRA on a per-segment basis, not a per-patient basis.	1

168	256. Koelemay MJ, Lijmer JG, Stoker J, Legemate DA, Bossuyt PM. Magnetic resonance angiography for the evaluation of lower extremity arterial disease: a meta-analysis. JAMA 2001;285: 1338e45.	metaanalysis	1090	Of 3583 studies initially identified, 34 were included that evaluated MRA in 1090 patients (72% men; median age, 65 years). Magnetic resonance angiography was highly accurate for assessment of all lower extremity arteries. Three-dimensional gadolinium-enhanced (3-D Gd) MRA improved diagnostic performance compared with 2-D MRA (relative diagnostic odds ratio, 2.8 [95% confidence interval, 1.2-6.4]), adjusted for number of subdivisions within arterial tracts. The estimated points of equal sensitivity and specificity were 94% and 90% for 3-D Gd MRA and 2-D MRA, respectively.	1
168	257. Ouwendijk R, de Vries M, Stijnen T, Pattynama PM, van Sambeek MR, Buth J, et al. Multicenter randomized controlled trial of the costs and effects of noninvasive diagnostic imaging in patients with peripheral arterial disease: the DIPAD trial. AJR Am J Roentgenol 2008;190:1349e57.	experimental	514	With adjustment for potentially predictive baseline variables, the learning curve, and hospital setting, a significantly higher confidence and less additional imaging were found for MRA and CTA compared with duplex sonography. No statistically significant differences were found in improvement in functional patient outcomes and quality of life among the groups. The total costs were significantly higher for MRA and duplex sonography than for CTA.	1
198	64. Schröder F, Diehm N, Kareem S, et al. A modified calculation of ankle-brachial pressure index is far more sensitive in the detection of peripheral arterial disease. J Vasc Surg. 2006;44:531–6.	observational	216	LAP had a sensitivity of 0.89 and a specificity of 0.93. The HAP method had a sensitivity of 0.68 and a specificity of 0.99. McNemar's test to compare the results of both methods demonstrated a two-tailed P < .0001, indicating a highly significant difference between both measurement methods.	2
198 245	65. Premalatha G, Ravikumar R, Sanjay R, et al. Comparison of colour duplex ultrasound and ankle-brachial pressure index measurements in peripheral vascular disease in type 2 diabetic patients with foot infections. J Assoc Physicians India. 2002;50:1240–4.	observational	100	The mean age of the study group was 59.5 +/- 10.1 years and the mean duration of diabetes was 11.7 +/- 8.1 years. Of the total 100 subjects, six subjects had calcification of peripheral vessels and they were not included while calculating for sensitivity and specificity of ABI. Twenty (21.3%) subjects diagnosed as PVD by the CDU were not classified as PVD by the ABI measurements. Conversely, only three subjects (3.2%) classified as PVD by ABI had normal arteries based on CDU scanning. Overall, ABI had low sensitivity (70.6%) but a high specificity (88.5%). The overall agreement between CDU and ABI was poor (k = 0.20).	3
198	66. Allen J, Oates CP, Henderson J, et al. Comparison of lower limb arterial assessments using color-duplex ultrasound and ankle/ brachial pressure index measurements. Angiology. 1996;47: 225–32.	observational	200	The overall level of agreement between CDU and resting ABPI measurements was 83% (Kappa 0.66). The ABPI technique identified the more serious disease; a resting ABPI of less than 0.6 gave 100% agreement with CDU. With higher resting ABPIs the level of agreement became poorer: 83% (0.6 < or = ABPI <0.9) and 76% (normal ABPI > or = 0.9). The addition of postexercise ABPI measurements in determining significant arterial disease increased the strength of relationship between the two techniques by only 2% (85%, Kappa 0.69). The exercise test was generally limited by the most symptomatic limb in each patient, and the agreement between CDU and postexercise ABPI measurements in these limbs was higher at 93% (Kappa 0.81). In comparison, agreement for the least symptomatic group of limbs was found to be poor (69%, Kappa 0.37). Compared with symptoms after exercise, overall agreements with CDU and ABPI were both 67% (Kappa 0.27). The agreement was better (91%) when the resting ABPI was less than 0.6.	2
198	67. Lijmer JG, Hunink MG, van den Dungen JJ, et al. ROC analysis of noninvasive tests for peripheral arterial disease. Ultrasound Med Biol. 1996;22:391–8.	observational	-	This study suggests that, in assessing whether a patient has significant peripheral arterial disease (lesions > or = 50%), determining an ABI is justified (ROC area 0.95 +/- 0.02). For disease localized to the aortoiliac segment, performing a single test, the femoral PI, is sufficient (ROC area 0.80 +/- 0.04). For disease including the femoropopliteal and infrapopliteal segments, a combination of tests is necessary. Utilized threshold values need to be adjusted for verification bias.	3
198 245	68. Guo X, Li J, Pang W, et al. Sensitivity and specificity of anklebrachial index for detecting angiographic stenosis of peripheral arteries. Circ J. 2008;72:605–10.	observational	298	A total of 298 consecutive patients (199 men, 99 women, 64.9+/-11.3 years old) underwent conventional DSA and ABI measurement. Receiver operator characteristics (ROC) analysis was performed to assess possible threshold values that predict PAD in these patients. The greater the stenosis in the artery of the lower extremity, the lower the measured ABI value. DSA was used as the gold standard in defining lesions >or=30%, >or=50%, and >or=70% and the respective areas under the ROC curve were 0.786 (95% confidence interval (CI) 0.712, 0.860), 0.927 (95% CI 0.869, 0.984), and 0.963 (95% CI 0.927, 0.999). Conventional DSA was the gold standard in defining >or=50% luminal stenosis for the diagnosis of lower extremity PAD. The 0.95 is the overall cutoff of the ABI that was associated with 91% sensitivity, 86% specificity, 6.5 LR+ and 0.1 LR- for detection of hemodynamically significant stenosis (lesions >or=50%) in all 298 subjects (p<0.001).	2
198	69. Niazi K, Khan TH, Easley KA. Diagnostic utility of the two methods of ankle brachial index in the detection of peripheral arterial disease of lower extremities. Catheter Cardiovasc Interv. 2006;68:788–92.	observational	107	The sensitivity of the HAP and LAP ABI for the diagnosis of PAD was 69 and 84%, respectively (P < 0.001). The specificity of the HAP and the LAP method was 83 and 64% respectively (P < 0.01). The overall accuracy of LAP ABI and HAP ABI was 80 and 72%, respectively.	3
245	31 Baxter GM, Polak JF. Lower limb colour flow imaging: A comparison with ankle: brachial measurements and angiography. Clinical Radiology. 1993; 47(2):91-95	observational	20	A prospective pilot study of 20 patients (40 limbs) comparing these two techniques with colour Doppler ultrasound was carried out. Although ankle: brachial indices could accurately predict disease (sensitivity 100%, accuracy 92.5%), it failed to localize it; neither a high thigh: brachial index nor segmental drop could localize disease to the iliac (accuracy 70%) or femoro-popliteal (accuracy 55%) vessels respectively. Colour Doppler ultrasound correctly differentiated iliac from femoro-popliteal disease. It had an overall diagnostic accuracy of 90% in the femoral and popliteal vessels for both occlusion and stenosis and diagnosed 10 of 11 iliac lesions.	3

245	32 Janssen A. Pulsatility index is better than ankle-brachial doppler index for non-invasive detection of critical limb ischaemia in diabetes. Vasa. 2005; 34(4):235-241	observational	106	Of the 140 legs, 61 (44%) were affected by CLI, and 76 (54%) by medial arterial calcification. A PI < 1.2 indicated CLI with a sensitivity of 0.87 and a specificity of 0.62. The sensitivity and specificity of ankle-brachial index < 0.9, and of systolic ankle pressure < 70 mm Hg to predict CLI was 0.71 and 0.42, and 0.30 and 0.89, respectively.	3
245	34 Schroder F, Diehm N, Kareem S, Ames M, Pira A, Zwettler U et al. A modified calculation of ankle-brachial pressure index is far more sensitive in the detection of peripheral arterial disease. Journal of Vascular Surgery. 2006; 44(3):531-536	observational	-	LAP had a sensitivity of 0.89 and a specificity of 0.93. The HAP method had a sensitivity of 0.68 and a specificity of 0.99. McNemar's test to compare the results of both methods demonstrated a two-tailed P < .0001, indicating a highly significant difference between both measurement methods.	3
36	1. Norgren L, Hiatt WR, Dormandy JA, Nehler MR, Harris KA, Fowkes FG, et al. Inter-society consensus for the management of peripheral arterial disease (TASC II). Eur J Vasc Endovasc Surg 2007;33 Suppl 1:S1-S75	guideline	-	-	1
36	2. European Stroke Organisation, Tendera M, Aboyans V, Bartelink ML, Baumgartner I, Clément D, et al. ESC Guidelines on the diagnosis and treatment of peripheral artery diseases: Document covering atherosclerotic disease of extracranial carotid and vertebral, mesenteric, renal, upper and lower extremity arteries: the Task Force on the Diagnosis and Treatment of Peripheral Artery Diseases of the European Society of Cardiology (ESC). Eur Heart J 2011;32:2851-2906	guideline	-	-	1
36	3. Hirsch AT, Haskal ZJ, Hertzer NR, Bakal CW, Creager MA, Halperin JL, et al. ACC/AHA 2005 Practice Guidelines for the management of patients with peripheral arterial disease (lower extremity, renal, mesenteric, and abdominal aortic): a collaborative report from the American Association for Vascular Surgery/Society for Vascular Surgery, Society for Cardiovascular Angiography and Interventions, Society for Vascular Medicine and Biology, Society of Interventional Radiology, and the ACC/AHA Task Force on Practice Guidelines (Writing Committee to Develop Guidelines for the Management of Patients With Peripheral Arterial Disease): endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation; National Heart, Lung, and Blood Institute; Society for Vascular Nursing; TransAtlantic Inter-Society Consensus; and Vascular Disease Foundation. Circulation 2006;113:e463-e654	guideline	-	-	1
36	4. National Clinical Guideline Center. Lower limb peripheral arterial disease: diagnosis and treatment. Manchester: National Institute for Health and Clinical Excellence, 2012	guideline	-	-	1
36	5. Scottish Intercollegiate Guidelines Network. Diagnosis and management of peripheral arterial disease. A national clinical guideline. Edinburgh: Scottish Intercollegiate Guidelines Network, 2006	guideline	-	-	1
36	6. Abramson BL, Huckell V, Anand S, Forbes T, Gupta A, Harris K, et al. Canadian Cardiovascular Society Consensus Conference: peripheral arterial disease - executive summary. Can J Cardiol 2005;21:997-1006	guideline	-	-	1
36	7. Symes JF, Graham AM, Mousseau M. Doppler waveform analysis versus segmental pressure and pulse-volume recording: assessment of occlusive disease in the lower extremity. Can J Surg 1984;27:345-347	observational	50	No appreciable difference was demonstrated between the two methods, both giving an overall accuracy in the 90% to 95% range. Both accurately predicted the severity of iliac and superficial femoral artery obstruction and distinguished iliac from proximal disease of the superficial femoral artery. Outflow disease (tibial arteries) was better assessed by measurement of segmental pressures than by Doppler waveform analysis or pulse-volume recording alone.	3
36	10. Collins R, Cranny G, Burch J, Aguiar-Ibáñez R, Craig D, Wright K, et al. A systematic review of duplex ultrasound, magnetic resonance angiography and computed tomography angiography for the diagnosis and assessment of symptomatic, lower limb peripheral arterial disease. Health Technol Assess 2007;11:iii-iv, xi-xiii, 1-184	review	-	A total of 113 studies met the inclusion criteria (including six economic evaluations). For the detection of stenosis greater than 50% in the whole leg, contrast-enhanced (CE) MRA (14 studies) had the highest diagnostic accuracy, with sensitivity ranging from 92 to 99.5% and specificity from 64 to 99%. Two-dimensional (2D) time-of-flight (TOF) MRA (11 studies) was less accurate, with sensitivity ranging from 79 to 94% and specificity from 74 to 92%. 2D phase-contrast (PC) MRA (one study) had a sensitivity of 98% and specificity of 74%. CTA (seven studies) also appeared slightly inferior to CE MRA, with a sensitivity ranging from 89 to 99% and specificity from 83 to 97%, but better than DUS (28 studies), which had a sensitivity ranging from 80 to 98% and specificity from 89 to 99%. There was some indication that CE MRA and DUS were more accurate for detecting stenoses/occlusions above the knee than below the knee or in the pedal artery. The four studies of patient attitudes strongly suggested that patients preferred CE MRA to CA. CA was considered the most uncomfortable test, followed by CE MRA, with CTA being the least uncomfortable. Half of the patients (from a sample who did not suffer from claustrophobia and had no metallic implants) expressed no preference between undergoing TOF MRA or DUS; most of those who did express a preference favoured TOF MRA. In the 55 studies identified for adverse events, MRA was associated with the highest reported proportion. However, the most severe adverse events were more common in patients undergoing CA; although these were rare for both tests. The economic evaluation showed DUS dominated the other alternatives when the whole leg was assessed, by presenting higher effectiveness at a lower	1

36	11. Pinto F, Lencioni R, Napoli V, Petrucci R, Vignali C, Armillotta N, et al. Peripheral ischemic occlusive arterial disease: comparison of color Doppler sonography and angiography. J Ultrasound Med 1996;15:697-704; quiz 705-706	observational	334	Overall, color Doppler sonography revealed diagnostic agreement with angiography in 668 of 714 lesions (93.5%), including 343 of 369 (92.9%) nonsignificant stenoses, 279 of 297 (93.9%) significant stenoses, and 46 of 48 (95.8%) occlusions. Overestimation occurred in 26 of 369 (7%) nonsignificant stenoses and 3 of 297 (1%) significant stenoses. Underestimation was observed in 15 of 297 (5%) significant stenoses and in 2 of 48 (4.2%) occlusions. Peak systolic velocity ratio correlated better (P < 0.01) than peak systolic velocity with diameter reduction percentage as assessed at angiography.	2
36	12. Moneta GL, Yeager RA, Lee RW, Porter JM. Noninvasive localization of arterial occlusive disease: a comparison of segmental Doppler pressures and arterial duplex mapping. J Vasc Surg 1993;17:578-582	observational	79	Rates of sensitivity and specificity of arterial duplex mapping for identifying a high-grade stenosis at the three arterial levels were 88% and 97%, 95% and 100%, and 78% and 99%, respectively. Those for segmental Doppler pressures were 59% and 86%, 73% and 80%, and 48% and 53%, respectively. There was complete agreement between arterial duplex mapping and angiography in 82% of the limbs studied and between segmental pressures and angiography in 34% of the limbs (p < 0.0001). The presence of diabetes, kidney failure, or previous vascular surgery in the limb studied did not affect the accuracy of either test.	3
36	13. Rieker O, Düber C, Schmiedt W, von Zitzewitz H, Schweden F, Thelen M. Prospective comparison of CT angiography of the legs with intraarterial digital subtraction angiography. AJR Am J Roentgenol 1996;166:269-276	observational	50	The sensitivities of CTA were 100% for the diagnosis of femoral artery occlusion, 100% for the detection of popliteal artery (including tibial-peroneal arterial trunk) occlusion, and 94% for the detection of tibial artery occlusion. The specificities were 100%, 99%, and 98%, respectively. When maximum-intensity-projection images were interpreted without axial scans, sensitivities were 98%, 85%, and 92% and specificities were 100%, 99%, and 97%, respectively. For the accurate grading of high-grade (75-99%) stenoses of the superficial femoral artery and the popliteal artery (including tibial-peroneal arterial trunk), the sensitivities of CTA were 88% and 73% and the specificities were 94% and 100%, respectively. When maximum-intensity-projection images alone were used, the sensitivities for the correct grading of high-grade stenoses were 58% and 36% and the specificities were 99% and 100%, respectively.	3
36	14. Rubin GD, Schmidt AJ, Logan LJ, Sofilos MC. Multi-detector row CT angiography of lower extremity arterial inflow and runoff: initial experience. Radiology 2001;221:146-158	observational	24	A mean scanning time of 66 seconds was required to cover a mean of 1,233 mm, resulting in a mean of 908 transverse reconstructions. All 504 arterial segments were depicted and analyzable. Mean arterial attenuation ranged from 253 HU in the midabdominal aorta to 357 HU in the popliteal artery and 253 HU in the dorsalis pedis or posterior tibial artery measured inferior to the tibiotalar joint. Maximum mean venous enhancement (99 HU) was observed in the saphenous vein at the ankle, with all other venous stations measuring less than 74 HU.	3
36	16. Khilnani NM, Winchester PA, Prince MR, Vidan E, Trost DW, Bush HL Jr, et al. Peripheral vascular disease: combined 3D bolus chase and dynamic 2D MR angiography compared with x-ray angiography for treatment planning. Radiology 2002;224:63-74	observational	30	The three readers selected identical segments for inflow at MR angiography and x-ray angiography in 32, 32, and 35 of the 35 limbs evaluated (mean percentages of agreement [95% CI]: 91% [77%, 98%], 91% [77%, 98%], and 95% [90%, 100%], respectively). The readers selected identical segments for outflow in 32, 32, and 34 of the 35 limbs evaluated (mean percentages of agreement [95% CI]: 91% [77%, 98%], 91% [77%, 98%], and 97% [85%, 100%], respectively).	2
36	17. Kreitner KF, Kalden P, Neufang A, Düber C, Krummenauer F, Küstner E, et al. Diabetes and peripheral arterial occlusive disease: prospective comparison of contrast-enhanced three-dimensional MR angiography with conventional digital subtraction angiography. AJR Am J Roentgenol 2000;174:171-179	observational	24	MR angiography was significantly better than DSA in revealing peripheral runoff vessels (p < 0.001). In nine (38%) of the 24 patients, MR angiography showed patent pedal vessels suitable for distal bypass grafting that were not revealed by DSA. Because of the results of MR angiography, treatment plans changed in seven of the nine patients in whom patent vessels were subsequently used as target vessels for distal pedal bypass grafts.	2
36	18. Bertschinger K, Cassina PC, Debatin JF, Ruehm SG. Surveillance of peripheral arterial bypass grafts with three-dimensional MR angiography: comparison with digital subtraction angiography. AJR Am J Roentgenol 2001;176:215-220	observational	39	Sensitivity and specificity values for MR angiography regarding the assessment of grafts were 100% for 87 evaluable segments for which digital subtraction angiography correlation was available: stenosis (n = 10), occlusions (n = 9), ectasia or aneurysms (n = 8). Six segments could not be assessed because of the presence of intravascular stents or metallic clips.	3
36	19. Dorenbeck U, Seitz J, Völk M, Strotzer M, Lenhart M, Feuerbach S, et al. Evaluation of arterial bypass grafts of the pelvic and lower extremities with gadolinium-enhanced magnetic resonance angiography: comparison with digital subtraction angiography. Invest Radiol 2002;37:60-64	observational	15	Using both techniques, 70 of 75 evaluated locations (93.3%) were classified identically. This included six stenoses < 50% and six stenoses > 50%, respectively. Four of five overestimations of stenoses were scaled in DSA as stenoses type 1. One stenosis was categorized as type 3 in DSA. Sensitivity for CE MRA for detecting stenoses >or= 25% was 100% and the specificity 90%. Interobserver agreement for all evaluations was 0.77 (Spearman rank correlation test).	3