KQ4. 뇌혈관성 치매가 의심되는 환자에서 최초 영상 검사로 적절한 검사는?

출처 문헌번호	문헌정보	연구유형	대상자수	연구결과	Study quality (KCIG)	Study quality (original)
ACR11	Murray AD. Imaging Approaches for Dementia. AJNR Am J Neuroradiol 2011;33:1836-44.	Review/Other-Dx	N/A	Brain imaging has progressed from exclusion of rare treatable mass lesions to a specific antemortem diagnosis. MRI-derived hippocampal atrophy and white matter hyperintensities are regarded as imaging biomarkers of AD and CVD respectively. Abnormal FP-CIT SPECT or cardiac iodobenzamide SPECT is a useful supportive imaging feature in the diagnosis of DLB. Frontal and/or anterior temporal atrophy and anterior defects on molecular imaging with FDG PET or perfusion SPECT are characteristic of FTDs. Whole-body FDG-PET may be helpful in patients with rapidly progressing "autoimmune dementias," and FLAIR and DWI are indicated in suspected CJD. A major role of imaging is in the development of new drugs and less costly biomarkers.	2	4
2	ACR Appropriateness Criteria R Dementia	Review/Other-Dx	N/A	In patients with suspected vascular dementia, MRI head without IV contrast or CT head without IV contrast is usually appropriate as the initial imaging. These procedures are equivalent alternatives (ie, only one procedure will be ordered to provide the clinical information to effectively manage the patient's care).	2	-
ACR58	Bonifacio G, Zamboni G. Brain imaging in dementia. [Review]. Postgrad Med J. 92(1088):333-40, 2016 Jun.	Review/Other-Dx	N/A	The introduction of MRI and positron emission tomography (PET) brain imaging has contributed significantly to the understanding of different dementia syndromes. Over the past 20 years these imaging techniques have been increasingly used for clinical characterisation and differential diagnosis, and to provide insight into the effects on functional capacity of the brain, patterns of spatial distribution of different dementia syndromes and their natural history and evolution over time. Brain imaging is also increasingly used in clinical trials, as part of inclusion criteria and/or as a surrogate outcome measure. Here we review all the relatively specific findings that can be identified with different MRI and PET techniques in each of the most frequent dementing disorders.	2	4
ACR59	Roman GC, Tatemichi TK, Erkinjuntti T, et al. Vascular dementia: diagnostic criteria for research studies. Report of the NINDS-AIREN International Workshop. Neurology. 43(2):250-60, 1993 Feb.	Review/Other-Dx	N/A	Criteria for the diagnosis of vascular dementia (VaD) that are reliable, valid, and readily applicable in a variety of settings are urgently needed for both clinical and research purposes. To address this need, the Neuroepidemiology Branch of the National Institute of Neurological Disorders and Stroke (NINDS) convened an International Workshop with support from the Association Internationale pour la Recherche et l'Enseignement en Neurosciences (AIREN), resulting in research criteria for the diagnosis of VaD. Compared with other current criteria, these guidelines emphasize (1) the heterogeneity of vascular dementia syndromes and pathologic subtypes including ischemic and hemorrhagic strokes, cerebral hypoxic-ischemic events, and senile leukoencephalopathic lesions; (2) the variability in clinical course, which may be static, remitting, or progressive; (3) specific clinical findings early in the course (eg, gait disorder, incontinence, or mood and personality changes) that support a vascular rather than a degenerative cause; (4) the need to establish a temporal relationship between stroke and dementia onset for a secure diagnosis; (5) the importance of brain imaging to support clinical findings; (6) the value of neuropsychological testing to document impairments in multiple cognitive domains; and (7) a protocol for neuropathologic evaluations and correlative studies of clinical, radiologic, and neuropsychological features. These criteria are intended as a guide for case definition in neuroepidemiologic studies, stratified by levels of certainty (definite, probable, and possible). They await testing and validation and will be	2	4
ACR60	Singhal S, Rich P, Markus HS. The spatial distribution of MR imaging abnormalities in cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy and their relationship to age and clinical features. AJNR Am J Neuroradiol. 2005;26(10):2481-2487.	Observational-Dx	112 patients from 64 families	There is a characteristic pattern of MRI abnormalities in cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy that aids in differential diagnosis.	5	3
ACR28	Mosconi L, Tsui WH, Herholz K, et al. Multicenter standardized 18F-FDG PET diagnosis of mild cognitive impairment, Alzheimer's disease, and other dementias. J Nucl Med. 2008;49(3):390-398.	Observational-Dx	548: 110 normal; 114 MCI; 199 AD; 98 FTD	Standardized disease-specific PET patterns were developed that correctly classified 95% AD, 92% DLB, 94% FTD, and 94% normal. FDG-PET heterogeneity in MCI with nonmemory deficits ranged from absent hypometabolism to FTD and DLB PET patterns. Standardized automated analysis of FDG-PET scans may provide an objective and sensitive support to the clinical diagnosis in early dementia.	5	3
ACR64	Brundel M, Kwa VI, Bouvy WH, et al. Cerebral microbleeds are not associated with long-term cognitive outcome in patients with transient ischemic attack or minor stroke. Cerebrovasc Dis. 37(3):195-202, 2014.	Observational-Dx	397 patients	The mean age was 65 ± 12 years at inclusion. The vascular event at inclusion was a TIA in 170 patients (52%) and a minor ischemic stroke in 155 patients (47%). Microbleeds were present in 11.6% of the patients. Patients with microbleeds were significantly older than patients without microbleeds (70 ± 9 vs. 64 ± 12 years), more often had hypertension, and had more cerebral atrophy, WMH and lacunae on MRI (all p < 0.05). The mean TICS score was 35.3 ± 5.9 for patients with microbleeds (n = 29) and 34.6 ± 5.2 for patients without microbleeds (n = 251); the adjusted mean difference (95% CI) was 1.69 (–0.01 to 3.38). The total IQCODEscore was 66.0 ± 10.8 for patients with microbleeds (n = 9) and 63.1 ± 12.9 for patients without microbleeds (n = 39); the adjusted mean difference was 2.43 (–7.55 to 12.41). The relative risk (adjusted for age) for abnormal cognitive performance when having microbleeds was 1.19 (95% CI: 0.63– 2.26). Subcortical atrophy was associated with lower TICS score [standardized regression coefficient ß: –0.12 (–0.23 to 0.00); p = 0.04] and with lower IQCODE score [0.51 (0.19–0.83); p = 0.00]. The adjusted mean difference of IQCODE scores between patients with and those without a lacunar infarct was 0.39 (0.12–0.65; p = 0.01).	5	1
ACR65	Allen N, Berry JD, Ning H, Van Horn L, Dyer A, Lloyd-Jones DM. Impact of blood pressure and blood pressure change during middle age on the remaining lifetime risk for cardiovascular disease: the cardiovascular lifetime risk pooling project. Circulation. 125(1):37-44, 2012 Jan 03.	Review/Other-Dx	7 US Cohort studies	Data from 7 diverse US cohort studies were pooled. Remaining LTRs for CVD, coronary heart disease, and stroke were estimated for white and black men and women with death free of CVD as a competing event. LTRs for CVD by BP strata and by changes in BP over an average of 14 years were estimated. Starting at 55 years of age, we followed up 61 585 men and women for 700 000 person-years. LTR for CVD was 52.5% (95% confidence interval, 51.3–53.7) for men and 39.9% (95% confidence interval, 38.7– 41.0) for women. LTR for CVD was higher for blacks and increased with increasing BP at index age. Individuals who maintained or decreased their BP to normal levels had the lowest remaining LTR for CVD, 22% to 41%, compared with individuals who had or developed hypertension by 55 years of age, 42% to 69%, suggesting a dose-response effect for the length of time at high BP levels.	2	4