

COMPARISON OF ACETAZOLAMIDE-ENHANCED BRAIN SPECT USING Tc-99m ECD WITH CEREBRAL ANGIOGRAPHY IN PATIENTS WITH CEREBROVASCULAR DISEASE.

아산재단 서울중앙병원 핵의학과, 신경과¹, 혈관외과², 한양대학병원 핵의학과³

최윤영³, 문대혁, 류진숙, 양승오, 이재홍¹, 김종성¹, 김건연², 이회경

Cerebral vascular reserve can be assessed by development of collateral channels (DCC) on cerebral angiography(CA) or vasoreactivity (VR) on acetazolamide-enhanced brain SPECT (ACZ-SPECT). The purpose of this study was to compare Tc-99m ECD ACZ-SPECT with CA in the evaluation of vascular reserve in patients (pts) with cerebrovascular disease (CVD).

Twenty seven patients with CVD, including TIA (n=13), infarction (n=11) and asymptomatic pts (AS, n=3), underwent CA and ACZ-SPECT. Basal and ACZ-SPECT was obtained consecutively, and image subtraction was performed. On CA, degree of DCC was scored 0-3 (0: normal, 3: poor) according to parenchymal staining on delayed film. On ACZ-SPECT, decrease of VR was graded 0-3 (0: normal, 3: more than 30% decrease). The correlation between degree of stenosis, DCC and VR were analyzed.

Results are as follows: (n=38 arterial territories)

	VR				DCC				AC-VR	Infarct (n=16)				TIA, AS (n=22)				
	0	1	2	3	0	1	2	3		0	1	2	3	0	1	2	3	
Stenosis																		
100 %	6	2	1	15	0	9	7	8	DCC	0,1	4	1	1	1	4	1	2	4
≤ 95%	5	1	4	4	7	2	4	1	2,3	2	1	0	6	1	0	2	8	

1) Variable degree of VR or DCC was observed in totally occluded or stenotic cerebral arterial territories. 2) In arterial territories with poor DCC, ACZ-SPECT showed poor VR. However, in 5 out of 11 TIA or AS with good DCC, poor VR was observed.

These data suggests that 1) cerebral hemodynamic status cannot be assessed by the degree of stenosis on CA alone. 2) DCC may overestimate the cerebral vascular reserve in patients with TIA or AS. 3) ACZ-SPECT plays a complementary role to CA for evaluation of cerebral hemodynamic status in pts with CVD.