292 **Table 1 Diagnosis rate for DSA-NASCET stenosis**

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Diagnosis for DSA-NASCET ≥ 50%		**Sensitivity**	**Specificity**	**PPV**	**NPV**	**Accuracy**
(a) ICApsv ≥ 112cm/s		94.5%	93.4%	85.2%	97.4%	93.2%
(b) ICApsv/CCApsv ≥ 1.95		87.3%	96.5%	92.3%	94.4%	93.8%
(c) ICA-AcT ≥ 0.085 s		80.0%	82.0%	66.7%	90.1%	81.4%
(d) AcT ratio ≥ 1.31		94.5%	91.0%	82.6%	97.4%	92.1%
Diagnostic rate of combination						
	a + c	78.2%	95.9%	89.6%	90.7%	90.4%
	a + d	92.7%	99.2%	98.1%	96.8%	97.2%
	b + c	70.9%	98.4%	95.1%	88.2%	89.8%
	b + d	85.5%	98.4%	95.9%	93.8%	94.4%
Diagnosis for DSA-NASCET ≥70%		**Sensitivity**	**Specificity**	**PPV**	**NPV**	**Accuracy**
(a) ICApsv ≥176 cm/s		97.1%	94.4%	80.5%	99.3%	94.9%
(b) ICApsv/CCApsv ≥ 2.42		97.1%	91.0%	71.8%	99.2%	92.1%
(c) ICA-AcT ≥ 0.095 s		82.4%	83.2%	53.8%	95.2%	83.1%
(d) AcT ratio ≥ 1.35		97.1%	83.2%	57.9%	99.2%	85.9%
Diagnostic rate of combination						
	a + c	79.4%	95.8%	81.8%	95.1%	92.7%
	a + d	94.1%	95.1%	82.1%	98.6%	94.9%
	b + c	79.4%	95.8%	81.8%	95.1%	92.7%
	b + d	94.1%	93.0%	76.2%	98.5%	93.2%

294

295 DSA, digital subtraction angiography; NASCET, Symptomatic Carotid Endarterectomy Trial; PSV,
296 peak systolic velocity; ICA, internal carotid artery; CCA, common carotid artery; AcT; acceleration
297 time

298 ICApsv/CCApsv = PSV of ICA / PCV of the ipsilateral CCA

299 AcT ratio = ICA-AcT/ AcT of the ipsilateral CCA

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301 **Table 2 Summary of the previous studies evaluating stenosis and AcT/AcT ratio**

Author (years)	Number of vessels	Evaluation of stenosis ratio	Parameter	Cut off value	Sensitivity	Specificity	Reference
Takekawa, et al (2009)	127	PSV (ultrasound)	AcT	150 ms (PSV ≥ 150 cm/s)	92.3%	92.1%	5
Takekawa, et al (2009)	127	PSV (ultrasound)	AcT	160 ms (PSV ≥ 200 cm/s)	88.9%	11.1%	5
Tamura, et al (2013)	266	NASCET (ultrasound)*	AcT	110 ms (NASCET ≥ 50%)	58.1%	88.2%	7
Tamura, et al (2013)	266	NASCET (ultrasound)*	AcT	110 ms (NASCET ≥ 60%)	94.7%	82.7%	7
Tamura, et al (2013)	266	NASCET (ultrasound)*	AcT	110 ms (NASCET ≥ 70%)	100.0%	75.9%	7
Kamiya, et al (2015)	155**	PSV (ultrasound)	AcT	107.7 ms (PSV ≥ 300 cm/s)	85.7%	88.4%	8
Kamiya, et al (2015)	155**	NASCET (angiogram)	AcT	105.5 ms (NASCET ≥ 70%)	80.0%	94.1%	8
Present study	**177**	**NASCET (angiogram)**	**AcT**	**85 ms (NASCET ≥ 50%)**	**80.0%**	**82.0%**	**-**
Present study	**177**	**NASCET (angiogram)**	**AcT**	**95 ms (NASCET ≥ 70%)**	**82.4%**	**83.2%**	**-**
Takekawa, et al (2009)	127	PSV (ultrasound)	AcT ratio	1.75 (PSV ≥ 150 cm/s)	92.3%	97.4%	5
Takekawa, et al (2009)	127	PSV (ultrasound)	AcT ratio	2.0 (PSV ≥ 200 cm/s)	90.0%	96.6%	5
Takekawa, et al (2014)	265	ECST (ultrasound)	AcT ratio	1.5 (ECST ≥ 65%)	90.0%	93.5%	6
Kamiya, et al (2015)	155**	PSV (ultrasound)	AcT ratio	2.35 for PSV ≥ 300 cm/s	85.7%	95.2%	8
Kamiya, et al (2015)	155**	NASCET (angiogram)	AcT ratio	2.1 (NASCET ≥ 70%)	80.0%	94.1%	8
Present study	**177**	**NASCET (angiogram)**	**AcT ratio**	**1.35 (NASCET ≥ 70%)**	**97.1%**	**83.2%**	**-**
Present study	**177**	**NASCET (angiogram)**	**AcT ratio**	**1.31 (NASCET ≥ 50%)**	**94.5%**	**91.0%**	**-**

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Table2 (continued)

NASCET, Symptomatic Carotid Endarterectomy Trial; ECST, European Carotid Surgery Trial; PSV, peak systolic velocity; AcT; acceleration time

AcT ratio = ICA-AcT/ AcT of the ipsilateral CCA

*Angiography was performed in 11 vessels

**Vessels with carotid artery stenting