Non-Home Discharge After Endovascular Therapy for Chronic Limb-Threatening Ischemia: Insights from a Japanese Nationwide Registry (J-EVT)

Yosuke Hata, MD[1]; Osamu Iida, MD, PhD[2]; Mitsuyoshi Takahara, MD, PhD[3];
Shun Kohsaka, MD, PhD[4]; Takuya Haraguchi, MD[5]; Kazunori Horie, MD[6];
Toshiaki Mano, MD, PhD[1]; Tetsuya Amano, MD, PhD[7]; and Ken Kozuma, MD, PhD[8]

[1]Cardiovascular Center, Kansai Rosai Hospital, Amagasaki, Japan; [2]Cardiovascular Division, Osaka Police Hospital, Osaka, Japan; [3]Department of Laboratory Medicine, Osaka University Graduate School of Medicine, Suita, Japan; [4]Department of Cardiology, School of Medicine, Keio University, Tokyo, Japan; [5]Department of Cardiology, Asia Medical Group, Sapporo Heart Center, Sapporo Cardio Vascular Clinic, Sapporo, Japan; [6]Department of Cardiovascular Medicine, Sendai Kousei Hospital, Miyagi, Japan; [7]Department of Cardiology, Aichi Medical University, Nagakute, Japan; [8]Department of Cardiology, Teikyo University Hospital, Tokyo, Japan

COI Disclosure

Speaker name :

Yosuke Hata, MD

I have the following potential conflicts of interest to report:

☐ Consulting

☐ Employment in industry

☐ Stockholder of a healthcare company

☐ Owner of a healthcare company

☐ Other(s)

■ I do not have any potential conflict of interest

Background

Table I. Baseline characteristics

Characteristic	NHD rate[a]	P value[b]
Demographics		
Age, years		<.001
<60	2408 (15.0)	
60-70	3943 (20.5)	
70-80	4845 (27.7)	
>80	5328 (44.1)	
Female gender	7817 (29.1)	<.001
Nonwhite race	5814 (28.5)	<.001
Median income (quartiles)		.036
First (lowest)	5165 (24.4)	
Second	4225 (24.4)	
Third	3855 (25.7)	
Fourth (highest)	3279 (28.7)	
Payor		<.001
Medicare	13,655 (30.6)	
Medicaid	937 (18.6)	
Private	1510 (13.0)	
Self	162 (9.0)	
No charge	12 (5.1)	
Other	248 (17.6)	

Table III. Hierarchical multivariable logistic regression model predicting for nonhome discharge

Predictor	OR	95% CI	P value
Age, years (ref, <60)			<.001
60-70	1.37	1.28-1.46	
70-80	1.87	1.73-2.01	
>80	3.82	3.53-4.13	
Female gender	1.24	1.18-1.29	<.001
Nonwhite race	1.13	1.07-1.19	<.001
Median income (quartiles; ref, first)			
Second	1.04	0.98-1.10	.158
Third	1.09	1.03-1.16	.004
Fourth	1.18	1.10-1.27	<.001
Insurance payor (ref, Medicare)			<.001
Medicaid	0.67	0.61-0.73	
Private	0.54	0.50-0.58	
Self	0.26	0.21-0.32	
No charge	0.19	0.11-0.35	
Other	0.60	0.51-0.70	
Comorbidities and risk factors			<.001

Modified from Ramirez JL, et al. J Vasc Surg. 2021;74:178-186.

In a large-scale United States cohort, approximately 25% of patients with chronic limb-threatening ischemia (CLTI) undergoing revascularization required non-home discharge (NHD), with age, sex, comorbidities, race, and insurance status identified as key predictors.

Aims

The aim of the current study was to investigate the incidence of NHD after endovascular therapy (EVT) for CLTI and to identify its independent predictors in Japan.

Methods

➢ **Study design:**
Sub-analysis of nationwide Japanese registry of EVT (J-EVT)

➢ **Study participants:**
The registry included 38,307 patients with CLTI who underwent EVT between 2021 and 2023. We excluded in-hospital deaths and transfers to acute care hospitals, leaving 31,025 eligible patients (81.0%) were enrolled.

➢ **Outcome measure:**
The incidence of NHD
We defined NHD as discharge to long-term care beds providing low-intensity medical treatment and basic rehabilitation, or rehabilitation beds for intensive rehabilitation.

Statistical analysis

➤ Logistic regression model

Covariates were selected a priori on the basis of previous reports and clinical consensus, and included age (<70, 70–79, ≥80 years), ADL, sex, smoking, diabetes, dialysis, and perioperative complications.

Perioperative complications were defined as follows;

Any transfusion, bleeding requiring hemostatic procedure, or intracranial bleeding
Puncture site complication requiring transfusion
Cardiogenic shock requiring mechanical support

Emergent surgery	Myocardial infarction
Distal embolism	Stroke
Vessel rupture	Major amputation
Acute reocclusion	Surgical conversion
Contrast-induced nephropathy	Repeat endovascular intervention

Baseline characteristics

	NHD (+) (n = 4005)	NHD (-) (n = 27020)	p value
Male	2395 (59.8%)	17700 (65.5%)	< 0.001
Age, years	78 ± 10	75 ± 10	< 0.001
< 70 years	698 (17.4%)	6531 (24.2%)	
70-80 years	1454 (36.3%)	10436 (38.6%)	
≥ 80 years	1853 (46.3%)	10053 (37.2%)	
Activity of daily life			< 0.001
Ambulatory	967 (24.1%)	15661 (58.0%)	
Wheelchair	2177 (54.4%)	10268 (38.0%)	
Bedridden	861 (21.5%)	1091 (4.0%)	
Smoking	880 (22.0%)	7518 (27.8%)	< 0.001
Diabetes mellitus	2524 (63.0%)	17808 (65.9%)	< 0.001
Hemodialysis	1638 (40.9%)	11996 (44.4%)	< 0.001

Data given as n (%) or mean ± standard deviation.

Baseline characteristics

	NHD (+) (n = 4005)	NHD (-) (n = 27020)	p value
Perioperative complications	**173 (4.3%)**	**456 (1.7%)**	**< 0.001**
Major bleeding	42 (1.0%)	109 (0.4%)	< 0.001
Emergent surgery	5 (0.1%)	16 (0.1%)	0.24
Distal embolism	19 (0.5%)	54 (0.2%)	0.002
Vessel rupture	32 (0.8%)	111 (0.4%)	0.001
Contrast-induced nephropathy	0 (0.0%)	14 (0.1%)	0.30
Puncture site complication	19 (0.5%)	59 (0.2%)	0.004
Cardiogenic shock	1 (0.0%)	2 (0.0%)	0.85
Myocardial infarction	1 (0.0%)	2 (0.0%)	0.85
Stroke	6 (0.1%)	1 (0.0%)	< 0.001
Major amputation	26 (0.6%)	20 (0.1%)	< 0.001
Surgical conversion	8 (0.2%)	14 (0.1%)	0.003

Major bleeding was defined as any transfusion, bleeding requiring hemostatic procedure, or intracranial bleeding.

Baseline characteristics

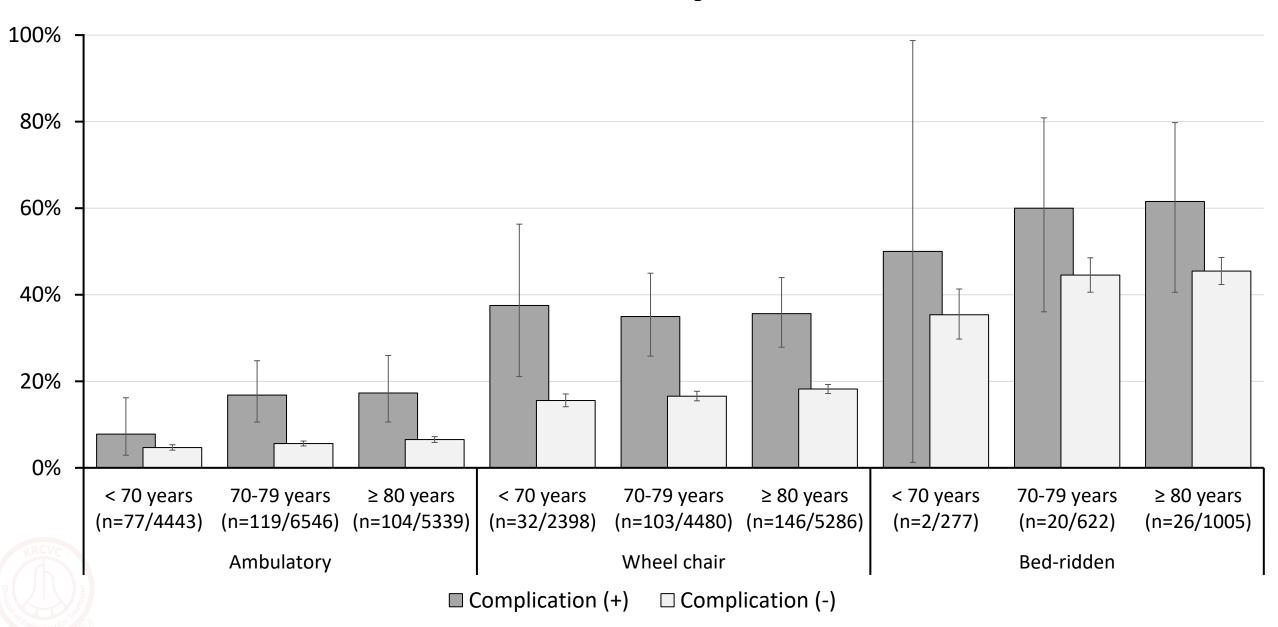|	NHD (+) (n = 4005)	NHD (-) (n = 27020)	p value
Length of hospital stay			**< 0.001**
15-30 days	815 (20.3%)	3050 (11.3%)	
≥ 31 days	2142 (53.5%)	3373 (12.5%)	
Scheduled follow-up visits			**< 0.001**
Within 1 month	851 (21.2%)	19087 (70.6%)	
Within 3 months	675 (16.9%)	4290 (15.9%)	
Within 6 months	306 (7.6%)	798 (3.0%)	
Within 12 months	55 (1.4%)	163 (0.6%)	
Beyond 12 months	7 (0.2%)	16 (0.1%)	
None	**2111 (52.7%)**	**2666 (9.9%)**	

Data given as n (%) or standard deviation.

Association between baseline characteristics and NHD

	Unadjusted model		Adjusted model	
	OR [95% CI]	p value	OR [95% CI]	p value
Male	0.78 [0.73-0.84]	<0.001	1.01 [0.93-1.09]	0.88
Age, < 70 years as reference				
70-80 years	1.30 [1.19-1.43]	<0.001	**1.16 [1.05-1.28]**	**0.004**
≥ 80 years	1.72 [1.57-1.89]	<0.001	**1.27 [1.15-1.41]**	**<0.001**
Activity of daily life, ambulatory as reference				
Wheelchair	3.43 [3.17-3.72]	<0.001	**3.35 [3.09-3.63]**	**<0.001**
Bedridden	12.8 [11.4-14.3]	<0.001	**12.2 [10.9-13.7]**	**<0.001**
Smoking	0.73 [0.67-0.79]	<0.001	0.94 [0.86-1.02]	0.13
Diabetes mellitus	0.88 [0.82-0.94]	<0.001	1.01 [0.94-1.09]	0.80
Hemodialysis	0.87 [0.81-0.93]	<0.001	0.94 [0.87-1.01]	0.11
Perioperative complications	2.63 [2.20-3.14]	<0.001	**2.61 [2.16-3.16]**	**<0.001**

Odds ratios (OR) are presented together with the 95% confidence intervals (CI).

A stratified analysis of NHD

Complication (+)   Complication (-)

Ambulatory
< 70 years (n=77/4443)
70-79 years (n=119/6546)
≥ 80 years (n=104/5339)

Wheel chair
< 70 years (n=32/2398)
70-79 years (n=103/4480)
≥ 80 years (n=146/5286)

Bed-ridden
< 70 years (n=2/277)
70-79 years (n=20/622)
≥ 80 years (n=26/1005)

Summary

➤ We analyzed 31,025 patients with CLTI who underwent EVT between 2021 and 2023 using nationwide Japanese registry of EVT (J-EVT).

➤ The incidence of NHD was 12.9%. Hospitalization exceeded 31 days in 53.5 % of NHD patients versus 12.5 % of home discharges, and more than half of NHD patients had no scheduled follow-up at the index institution.

➤ After multivariate analysis, older age, poor ADL, and perioperative complications were detected as predictors of NHD after EVT.

Conclusion

The incidence of NHD was 12.9% in patients with CLTI undergoing EVT. Older age, poor ADL, and perioperative complications were independent predictors of NHD.