



Vital role of plastic surgeons in wound healing after EVT for isolated BTK arterial lesions in patients with CLI

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Disclosure

Speaker name :

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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-1

- An endovascular therapy (EVT) has **led to better clinical outcomes** such as free from major amputation, complete wound healing, and a reduced mortality rate.
- However, around **20-30%** of patients **didn't respond** to revascularization
- Even after successful revascularization, meticulous wound care must be conducted with **other supportive medical treatment.**

Background-2

- In Japan, wound care is being performed by the each hospital policy. **Cardiologists, vascular surgeons, orthopedists, dermatologists and plastic surgeons** are now involved for wound management.
- Among these doctors, an plastic surgeon has the organized protocol and extensive care are being taken to enhance healing
- We need to evaluate real difference of wound healing among these different specialty.

Aim

Complete wound healing rates treated by plastic surgeons and other medical specialists were compared in patients who have undergone EVT for isolated BTK arterial disease.

Material and Methods

Study Design

A multicenter retrospective analysis based on database of patients [(J-BEAT III)registry] at 14 cardiovascular centers.

Endpoints

Primary Measure; **Complete wound healing rates**
between the PS and Non-PS groups

Secondary Measure; **Freedom from major adverse limb events (MALE*)**
between the PS and Non-PS groups

(To minimize intergroup differences were performed after propensity score matching)

Inclusion Criteria

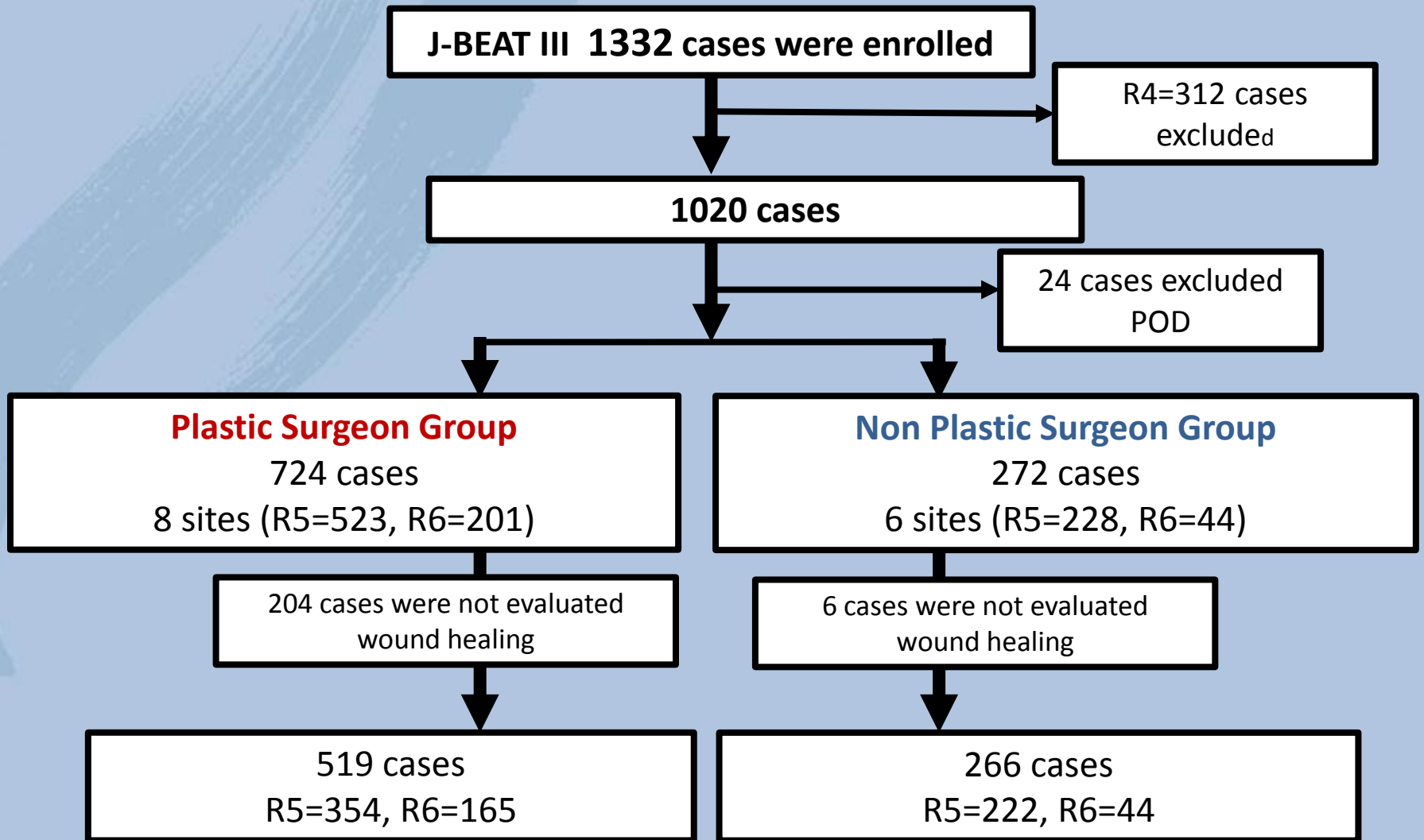
- Critical Limb Ischemia
- Rutherford Category 5 or 6
- Isolated BTK arterial lesions
- SPP<40mmHg

Exclusion Criteria

- Non ischemic ulcer
- Rutherford Category 4
- The usage of drug coated balloon, atherectomy device, stent implantation

*MALE; all-cause mortality, major amputations and surgical conversions

Study Scheme



R: Rutherford category

POD: post operative death

Patient and Lesion Characteristics(unmatched)

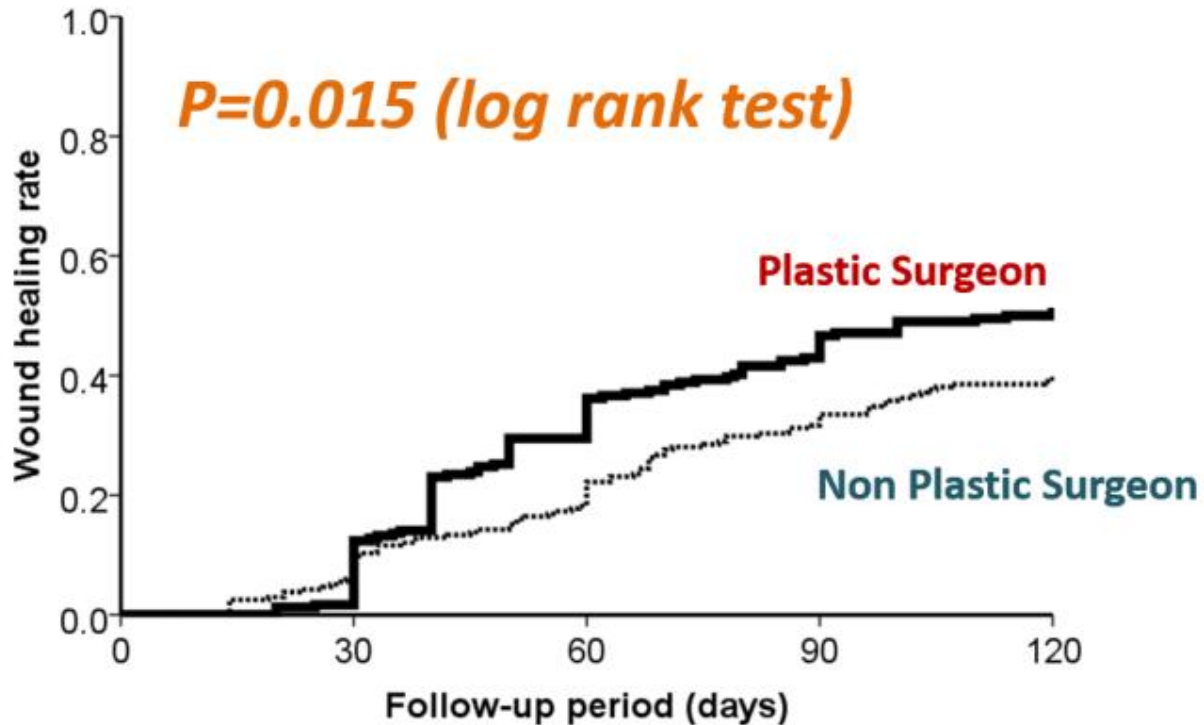
<i>Unmatched</i>	Overall (n = 906)	Non-PS group (n = 244)	PS group (n = 662)	P value
Age (years)	71 ± 11	71 ± 10	70 ± 11	0.118
Male gender	643 (71%)	172 (70%)	471 (71%)	0.869
Non-ambulatory status	417 (46%)	112 (46%)	305 (46%)	1.000
Hypertension	660 (73%)	175 (72%)	485 (73%)	0.674
Diabetes mellitus	699 (77%)	192 (79%)	507 (77%)	0.533
Regular dialysis	607 (67%)	148 (61%)	459 (69%)	0.017*
Coronary artery disease	479 (53%)	135 (55%)	344 (52%)	0.409
Serum albumin (g/dl)	3.5 ± 0.6	3.6 ± 0.6	3.5 ± 0.6	0.097*
LV ejection fraction (%)	58 ± 14	56 ± 14	58 ± 14	0.017*
Rutherford 6	312 (34%)	71 (29%)	241 (36%)	0.041*
Wound localization				
Toe	788 (87%)	203 (83%)	585 (88%)	0.045*
Heel	131 (14%)	37 (15%)	94 (14%)	0.750
Ankle	15 (2%)	5 (2%)	10 (2%)	0.564
Sole	27 (3%)	2 (1%)	25 (4%)	0.025*
Infection	376 (42%)	80 (33%)	296 (45%)	0.001*
TASC class D	824 (91%)	222 (91%)	602 (91%)	1.000
Below-the-ankle runoff	1.1 ± 0.8	1.1 ± 0.7	1.1 ± 0.8	0.491

Patient and Lesion Characteristics(matched)

<i>Matched</i>	Non-PS group (n = 242)	PS group (n = 242)	P value
Age (years)	71 ± 10	72 ± 10	0.637
Male gender	170 (70%)	163 (67%)	0.550
Non-ambulatory status	111 (46%)	106 (44%)	0.723
Hypertension	174 (72%)	176 (73%)	0.919
Diabetes mellitus	190 (79%)	186 (77%)	0.743
Regular dialysis	148 (61%)	155 (64%)	0.565
Coronary artery disease	133 (55%)	122 (50%)	0.379
Serum albumin (g/dl)	3.6 ± 0.6	3.5 ± 0.6	0.514
LV ejection fraction (%)	56 ± 14	57 ± 14	0.210
Rutherford 6	71 (29%)	59 (24%)	0.257
Wound localization			
Toe	201 (83%)	28 (12%)	0.127
Heel	37 (15%)	28 (12%)	0.298
Ankle	5 (2%)	6 (2%)	1.000
Sole	2 (1%)	0 (0%)	0.500
Instep	14 (6%)	11 (5%)	0.678
Infection	80 (33%)	77 (32%)	0.844
TASC class D	220 (91%)	222 (92%)	0.877
Below-the-ankle runoff	1.1 ± 0.7	1.1 ± 0.8	0.906

Primary Measure

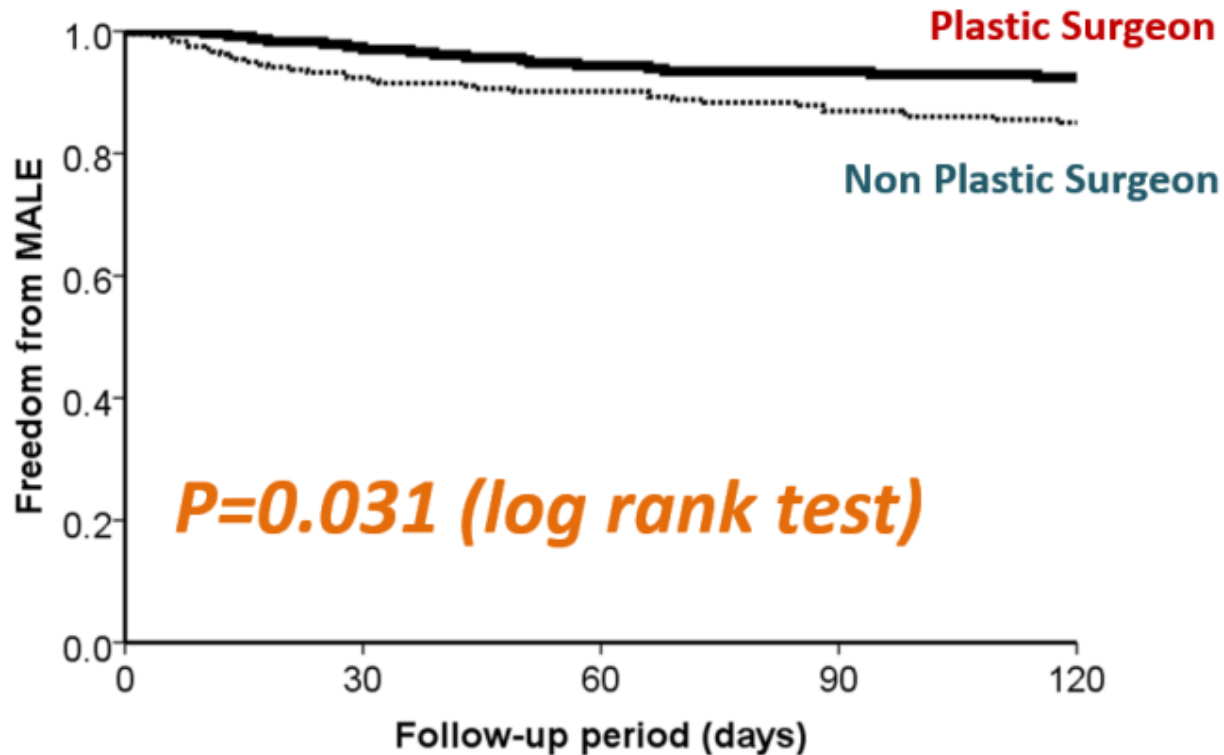
Complete wound healing rate



		0 days	30 days	60 days	90 days	120 days
PS group	No. at risk	242	230	158	123	99
	Rate \pm SE	0.0 \pm 0.0%	12.4 \pm 2.2%	36.2 \pm 3.2%	46.7 \pm 3.3%	52.0 \pm 3.4%
Non-PS group	No. at risk	242	216	184	150	127
	Rate \pm SE	0.0 \pm 0.0%	9.9 \pm 2.0%	22.2 \pm 2.7%	33.5 \pm 3.1%	40.0 \pm 3.3%

Secondary Measure

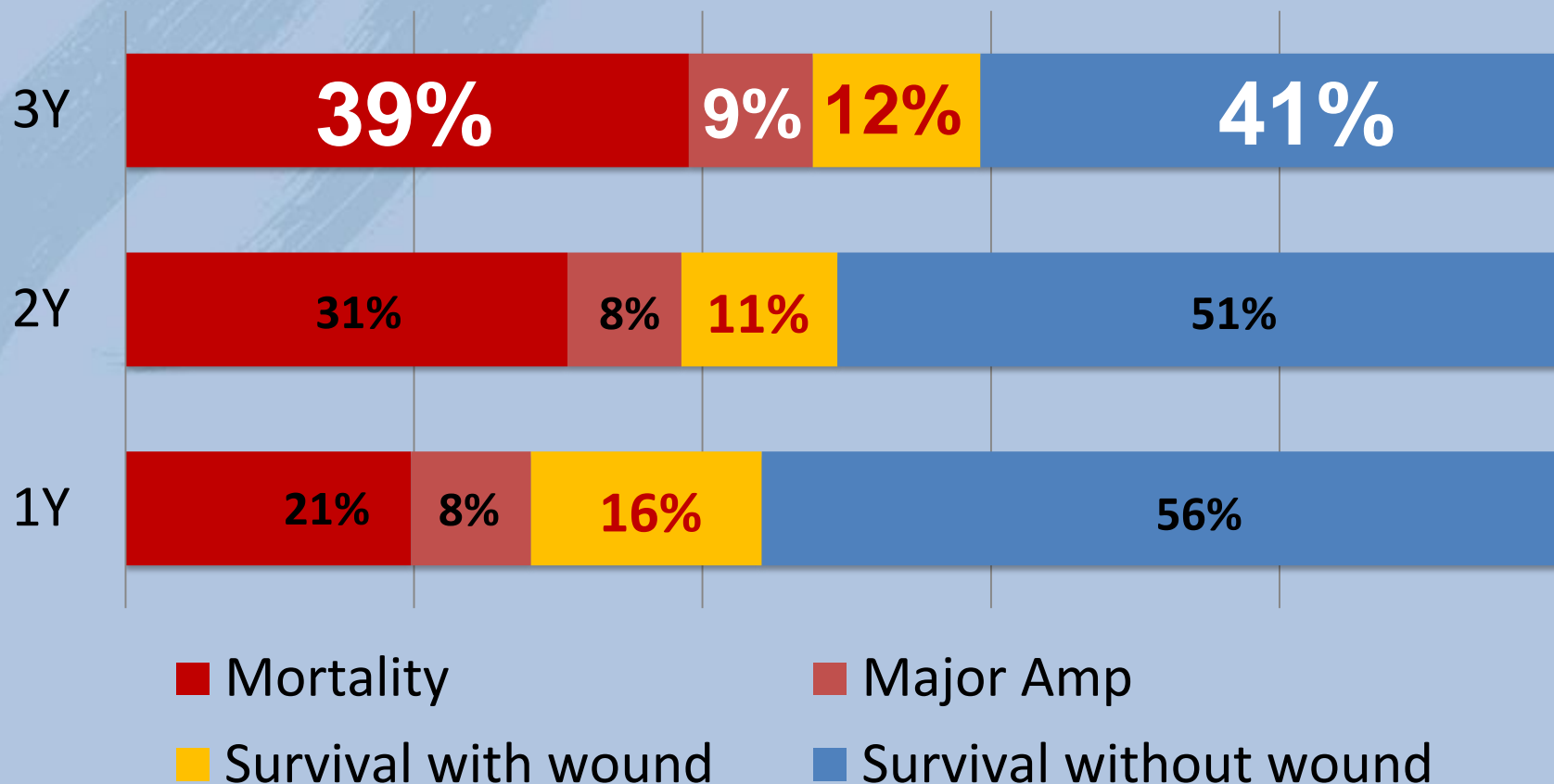
Free from MALE



		0 days	30 days	60 days	90 days	120 days
PS group	No. at risk	242	223	205	194	180
	Rate \pm SE	100.0 \pm 0.0%	97.0 \pm 1.1%	94.3 \pm 1.5%	93.4 \pm 1.6%	92.4 \pm 1.8%
Non-PS group	No. at risk	242	210	201	187	177
	Rate \pm SE	100.0 \pm 0.0%	92.4 \pm 1.7%	90.2 \pm 2.0%	86.9 \pm 2.2%	85.0 \pm 2.4%

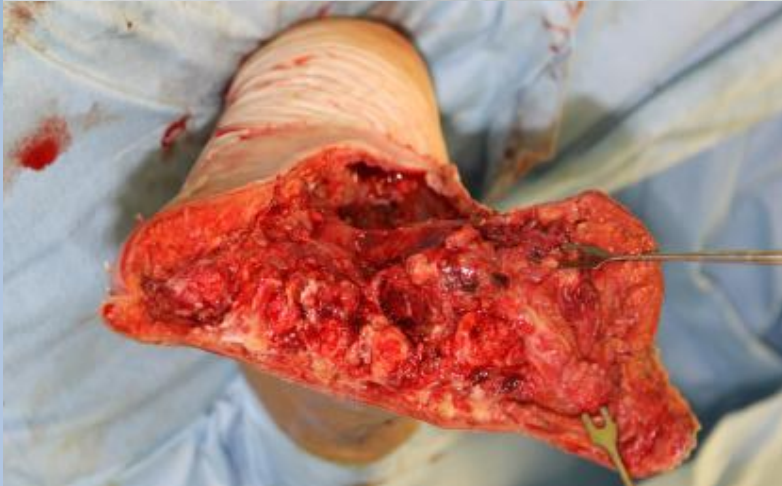
*MALE; all-cause mortality, major amputations and surgical conversions

3-Year Outcomes of the OLIVE Registry, a Prospective Multicenter Study of Patients With Critical Limb Ischemia



The wound-free survival
in patients with tissue loss





infection control, wound closure, debridement, dressing, hyperbaric oxygen (HBO) therapy, and minor amputation



Conclusion

- Complete wound healing rate by plastic surgeons was superior to other medical specialists.
- These data clearly suggest that **plastic surgeons** are better qualified for the treatment of ischemic wound management
- In team approach for CLI, participation of plastic surgeons are desirable