BUILDING ENDOVASCULAR SYNERGIES

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Intervention for acute lower limb ischemia

A 3 year single center experience

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Disclosure

Speaker name: Keisuke Fukuda M.D.

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I have the following potential conflicts of interest to report:

☐ Consulting

☐ Employment in industry

☐ Shareholder in a healthcare company

☐ Owner of a healthcare company

☐ Other(s)

☑ I do not have any potential conflict of interest

Background

- Acute lower limb ischemia (ALLI) can lead to loss of limb and life without prompt treatment
- Endovascular revascularization (ER) and open surgical revascularization (OR) are current options
- We assessed outcomes in patients treated for ALLI with endovascular or open surgical treatment

Methods

- Retrospective single-center review at Kishiwada Tokushukai Hospital
- Consecutive patients with ALLI between 2008 – 2014
  - 64 limbs in 62 patients
  - Treated with ER or OR
  - Embolism or thrombosis
  - Native arteries, bypass graft or previous stent
- To assess 3 year amputation rate and mortality

Procedures

- **The choice of the initial revascularization was at the clinician's discretion (surgeon or cardiologist)**

- **ER groups include:**
  - ***balloon angioplasty, stenting, aspiration***

- **OR groups include:**
  - ***fogaty catheter, bypass grafting***

Patients demographics (N=62)

	ER groups (n = 20)	OR groups (n = 42)	P value
Age. mean ± SD	73.3±13.2	76.5±11.6	0.354
Male (%)	10 (50.0)	24 (57.1)	0.597
Hypertension (%)	17 (85.0)	37 (88.1)	0.705
Dyslipidemia (%)	8 (40.0)	14 (33.3)	0.608
Diabetes (%)	8 (40.0)	7 (16.7)	0.060
Smoking (%)			
none	5 (25.0)	17 (40.5)	0.234
previous	3 (15.0)	6 (14.3)	0.941
current	8 (40.0)	12 (28.6)	0.368
CAD (%)	7 (35.0)	15 (35.7)	0.956
PAD (%)	14 (70.0)	20 (47.6)	0.098
CKD (%)	13 (65.0)	18 (42.9)	0.103
CVD (%)	6 (30.0)	13 (31.0)	0.939
Atrial Fibrillation (%)	8 (40.0)	27 (64.3)	0.071
- anticoagulation (+) (%)	4 (20.0)	6 (14.3)	
(non-effective/cessation)	(4)	(5)	
- anticoagulation (-) (%)	4 (20.0)	21 (50.0)	

Limbs characteristics (N=64)

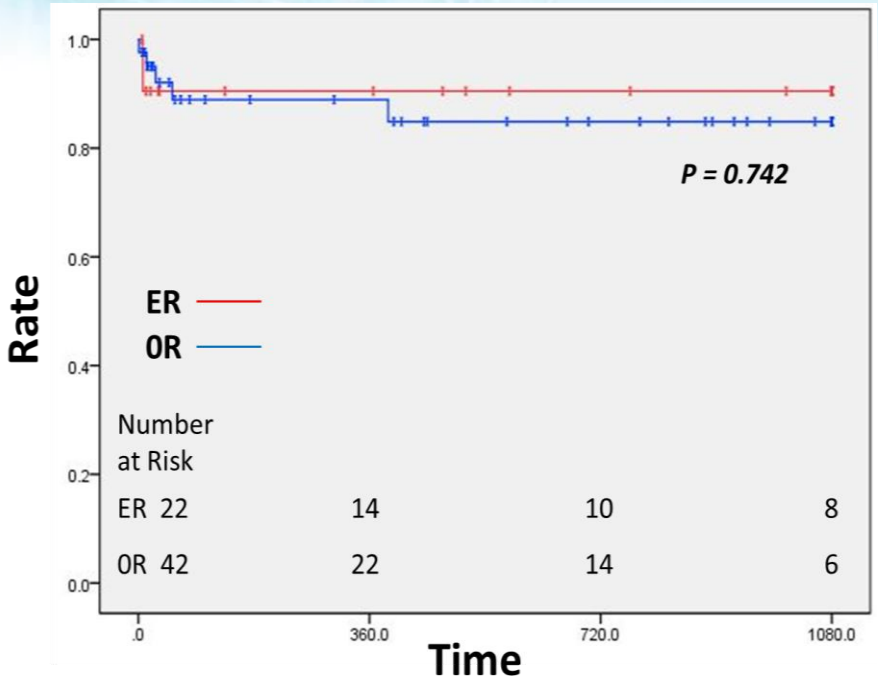
	ER groups (n = 22)	OR groups (n = 42)	P value
Rutherford class (%)			
Ⅰ	5 (22.7)	8 (19.0)	0.752
Ⅱa	11 (50.0)	17 (40.5)	0.466
Ⅱb	3 (13.7)	14 (33.3)	0.090
Ⅲ	3 (13.7)	3 (7.1)	0.406
Location (%)			
Aortoiliac	7 (31.8)	23 (54.8)	0.081
Femoropopliteal	11 (50.0)	16 (38.1)	0.360
Below the knee	4 (18.2)	3 (7.1)	0.220
Vessel (%)			
native artery	15 (68.2)	39 (92.9)	0.025
graft	2 (9.1)	2 (4.8)	0.603
stent	5 (22.7)	1 (2.4)	0.016

Procedural details (N=64)

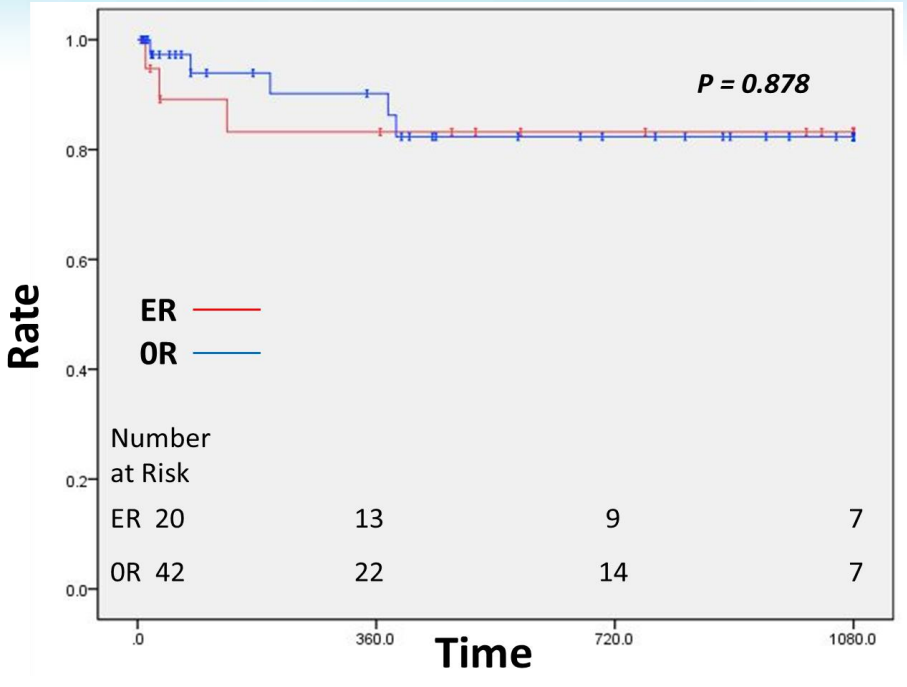
	strategy	Target vessel			Success rate	Hospital day
		Ao-Iliac	F-P	BTK		
ER (n=22)	Stent (+asp.)	5	11	0	*100%*	*11.9 (±14.5)* *(P=0.009)*
	Ballon (+asp.)	2	0	2		
	Aspiration	0	0	2		
OR (n=42)	Fogaty	22	17	3	*93%*	*23.7 (±20.4)*
	Bypass	4	1	0		

Result

Limb salvage rate at 3 years



Survival rate at 3 years



- The 3 year
  - Amputation rate were 9.1% (ER) vs 11.9% (OR) (P=0.742)
  - Mortality rate were 15% (ER) vs 11.2% (OR) (P=0.878)
- Both of two outcomes were comparable

Discussion (1)

- ALLI remains a challenging clinical dilemma
- Treatment of ALLI has shifted toward endovascular therapy
- Some patients are unfit for thrombolysis
- Novel devices are often not available
- Primary stenting for ALLI have risks of distal embolization

Kashyap VS1, Gilani R, Bena JF, Bannazadeh M, Sarac TP. Vasc Surg. 2011
Yilmaz S1, Sindel T, Lüleci E. J Endovasc Ther. 2003

Discussion (2)

- In recent years, reports about stenting for ALLI with good result and no distal embolism have increased

- In spite of limitations in this study, conventional stenting or balloon angioplasty combined with aspiration demonstrated acceptable result or durability

Kim C1, Jeon W, Shin T, Choi D, Kim J, Lee C, Choi J.Eur J Vasc Endovasc Surg. 2010
Raja J1, Munneke G, Morgan R, Belli AM. Cardiovasc Intervent Radiol. 2008

Conclusion

- Endovascular or open surgical revascularization of ALLI resulted in comparable rate of both limb salvage and mortality

- The treatment option of ALLI with conventional endovascular recanalization might be acceptable as occasion demands