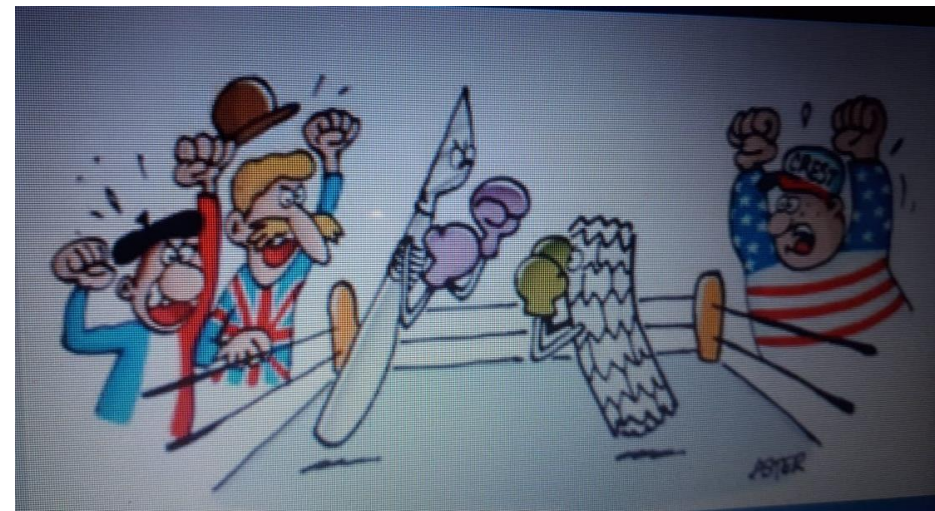
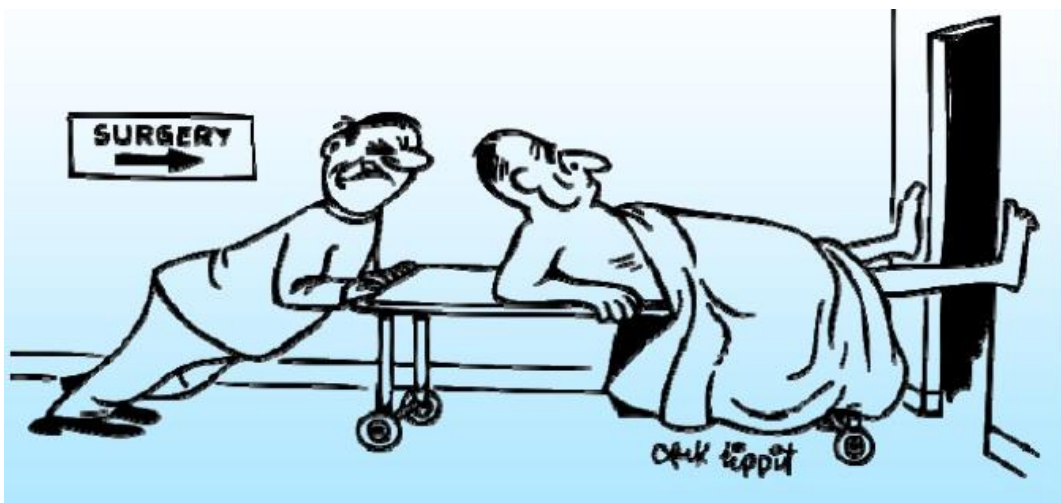


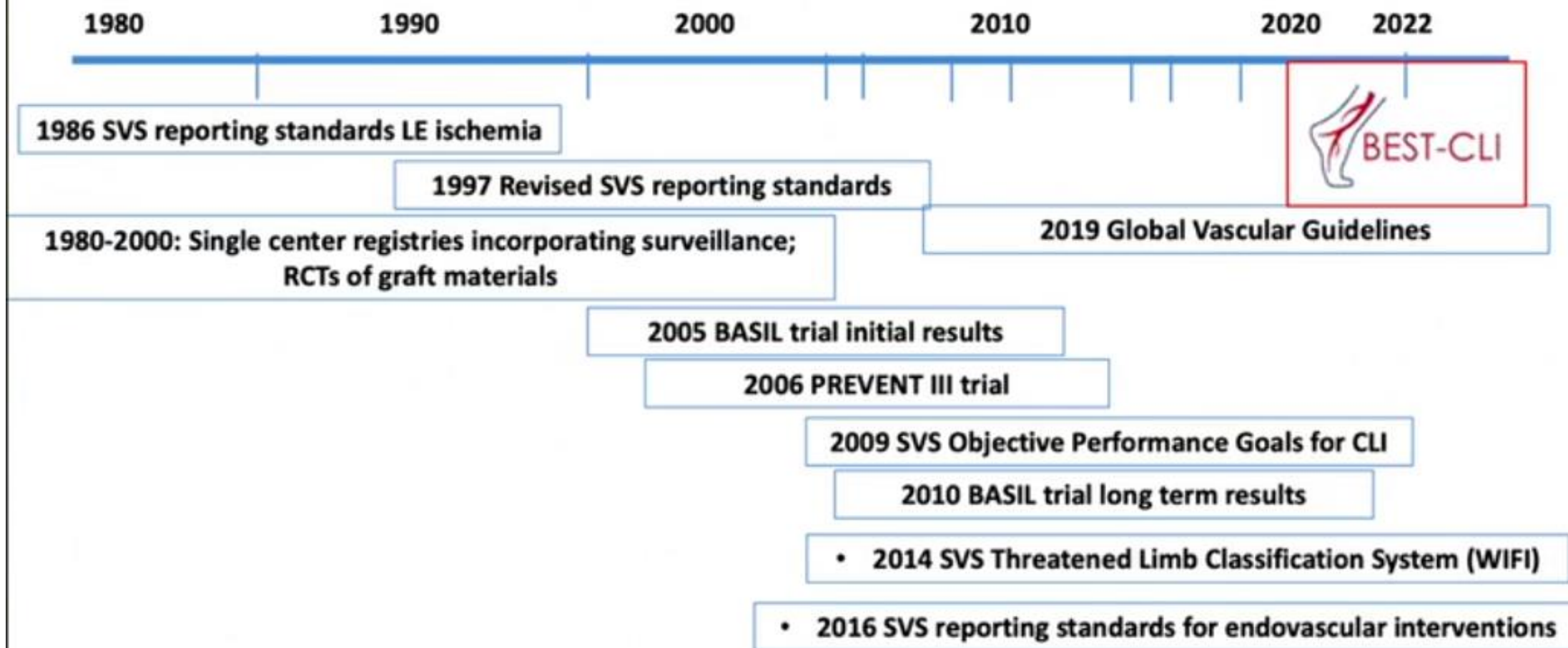
BEST CLI y BASIL 2... QUE NOS DEJARON



*Dr. Roberto Larghi
Cardiólogo Clínico*

*Cardiólogo Intervencionista
SCITE - Hospital Privado de Rosario
Sanatorio Laprida de Rosario*

Chronology of Evidence Based Revascularization for CLTI





Hasta el 2022

Es evidente en la literatura publicada la escasez de evidencia de alta calidad, especialmente con respecto a la revascularización infrapoplítea, y también se refleja en la baja solidez de las recomendaciones encontradas en varias guías internacionales.

BASIL-2 and BEST-CLI: A tale of two limb trials

By Michael Conte - 9th June 2023 1515

Optimal treatment of patients with **chronic limb-threatening ischemia** (CLTI) has been an ongoing debate within the vascular community, fueled by growing numbers of patients, evolving technologies, provider bias, and a lack of high-quality evidence.

Few randomized controlled trials (RCTs) have focused on this patient population. Now, within a six-month period, the primary



NEWS • Conference News | AHA 2022

Long-Awaited BEST-CLI Results Favor Surgery Over Endovascular Therapy in CLTI

The highly selected, mostly white, male population has some physicians questioning the generalizability of the results.

by [L.A. McKeown](#) | NOVEMBER 07, 2022



NEWS • Daily News

BASIL-2 Supports Endo-First Strategy for CLTI With Infrapopliteal Disease

BASIL-2 points towards endovascular-first revascularization strategy in CLTI patients

By Jocelyn Hudson and Bryan Kay - 25th April 2023 1479

BEST-CLI late-breaking session at the American Heart Association 2022 Scientific Sessions, and they were simultaneously published in the New England Journal of Medicine.

Presented by Dr. Matthew T. Menard, November 7, 2022

THE NEW ENGLAND JOURNAL OF MEDICINE

ORIGINAL ARTICLE

BEST-CLI Study Design: Two Parallel Trials

PROSPECTIVO
RANDOMIZADO
MULTICENTRICO 133 US + 12
ABIERTO – PARALELO- 1:1
MULTIDISCIPLINARIO
RECLUTAMIENTO 2014-2019
SPONSOR US NHL&B INST

Patients with **CLTI due to infrainguinal PAD**

- corroborated by hemodynamic criteria
- not at excessive risk for surgery
- eligible for open and endo

Surgery or Endovascular Therapy for Chronic Limb-Threatening Ischemia

A. Farber, M.T. Menard, M.S. Conte, J.A. Kaufman, R.J. Powell, N.K. Choudhry, T.H. Hamza, S.F. Assmann,* M.A. Creager, M.J. Cziraky, M.D. Dake, M.R. Jaff, D. Reid, F.S. Siami, G. Sopko, C.J. White, M. van Over, M.B. Strong, M.F. Villarreal, M. McKean, E. Azene, A. Azarbal, A. Barleben, D.K. Chew, L.C. Clavijo, Y. Douville, L. Findeiss, N. Garg, W. Gasper, K.A. Giles, P.P. Goodney, B.M. Hawkins, C.R. Herman, J.A. Kalish, M.C. Koopmann, I.A. Laskowski, C. Mena-Hurtado, R. Motaganahalli, V.L. Rowe, A. Schanzer, P.A. Schneider, J.J. Siracuse, M. Venermo, and K. Rosenfield, for the BEST-CLI Investigators†

November 7, 2022, at NEJM.org.

DOI: 10.1056/NEJMoa2207899



Strata:

Ischemic Rest Pain Alone vs. Tissue Loss

Significant Tibial Occlusive Disease vs. No Tibial Occlusive Disease



Criterios de inclusión: Edad ≥ 18 años, CLTI, definida como insuficiencia arterial de la extremidad inferior con dolor isquémico en el pie en reposo, una úlcera isquémica que no cicatriza o gangrena, según lo corroboren los criterios hemodinámicos- **NO REQUIERE TENER SI o SI ENFERMEDAD INFRAPOPLITEA**

Criterio de exclusión: Riesgo excesivo asociado a la cirugía vascular abierta según los criterios de la AHA y el ACC o según el criterio médico del investigador, No apto tanto para cirugía como para abordaje endovascular.

BEST-CLI Study Design: Endpoints



Primary Endpoint: Major Adverse Limb Event (MALE) or all-cause death

- All-cause death
- MALE
 - Above Ankle Amputation *or*
 - First Major Reintervention **CLINICAL EVENTS COMMITTEE (CEC) ADJUDICATED**
 - new bypass, surgical interposition graft, surgical thrombectomy, thrombolysis

Safety Endpoints: MACE (Major Adverse Cardiovascular Events)

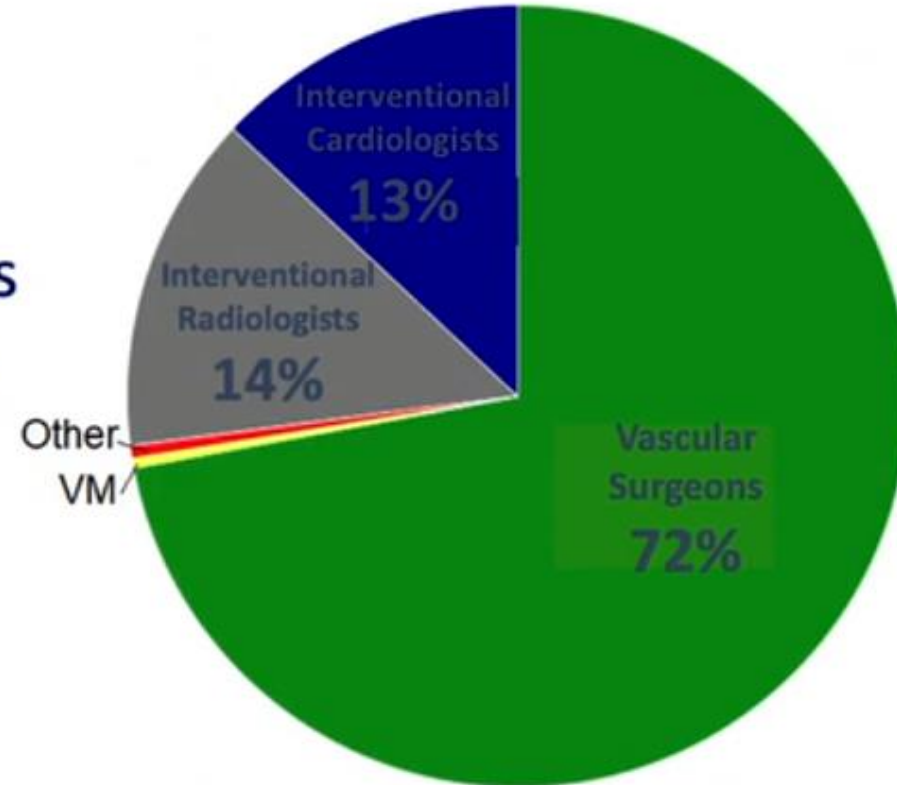
- All cause Death
- MI **CEC ADJUDICATED**
- Stroke **CEC ADJUDICATED**

BEST-CLI Investigators by Specialty



1,096 Investigators

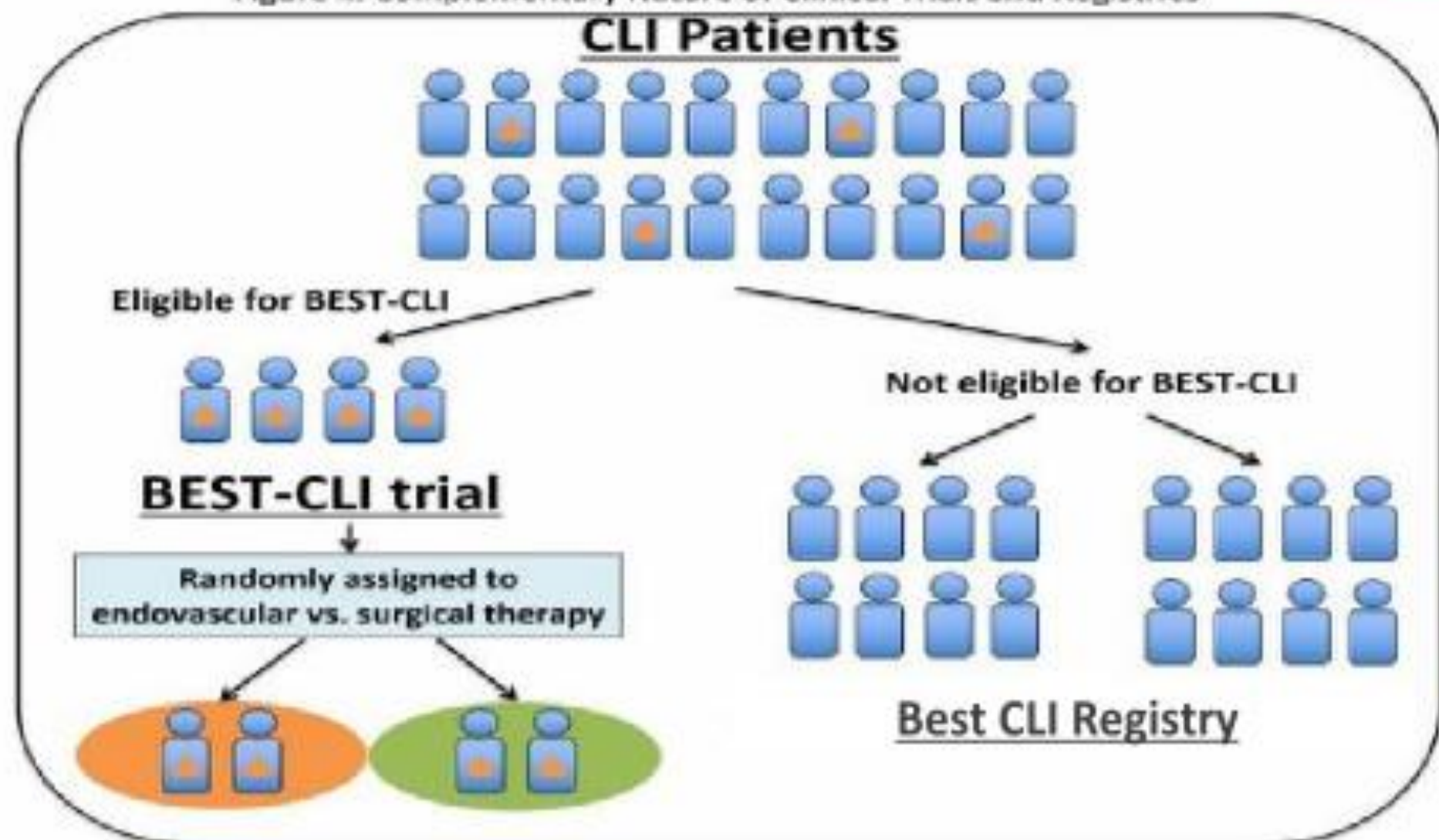
- 786 Vascular Surgeons
- 145 Interventional Cardiologists
- 156 Interventional Radiologists
- 4 Vascular Medicine
- 5 Other



**INCLINA LA
BALANZA???**

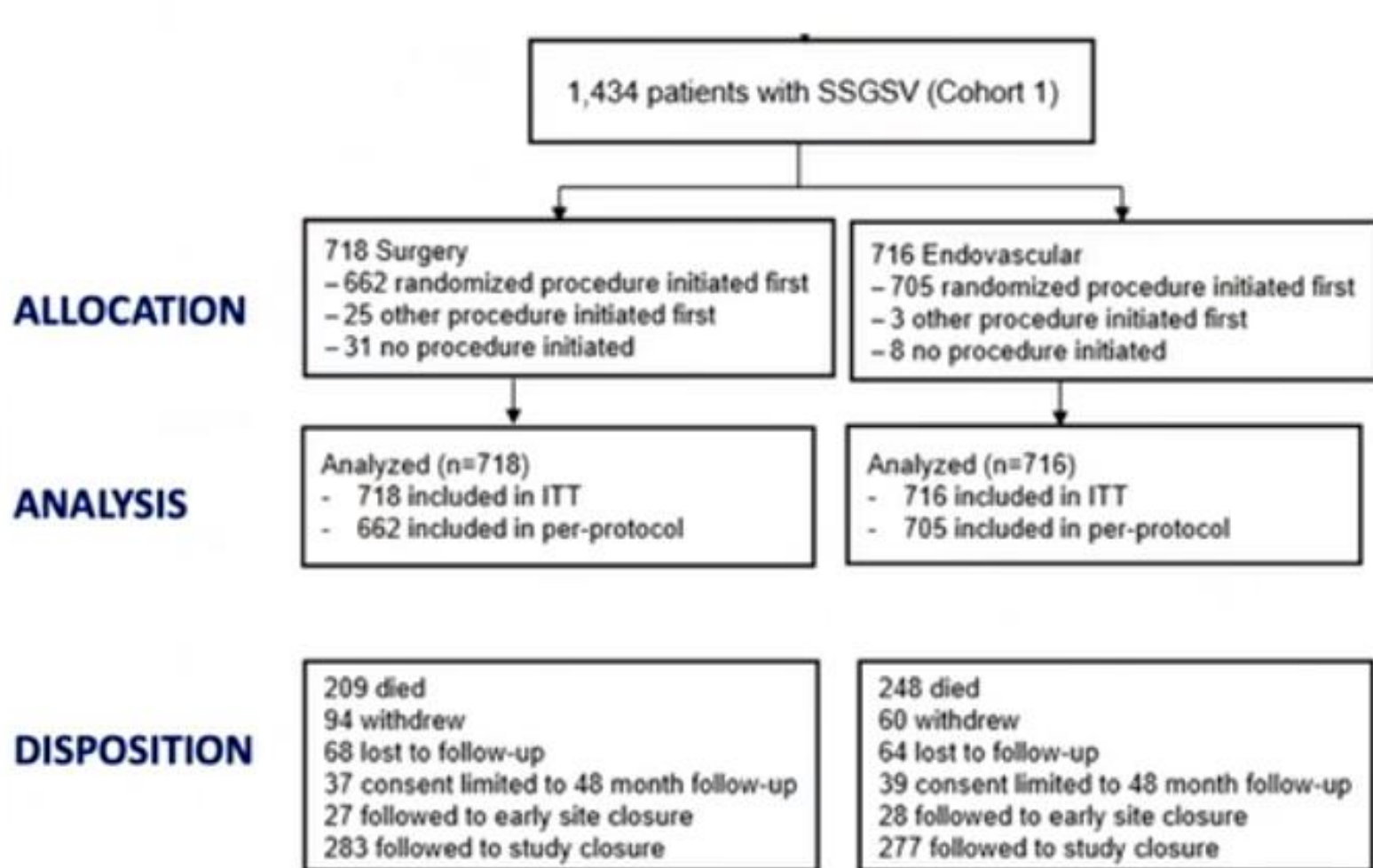


Figure 4. Complementary Nature of Clinical Trials and Registries



Cohort 1: SSGSV Available

Desde agosto de 2014 hasta octubre de 2019,
un total de 1434 pacientes (150 centros)



Crossovers:

Surgery → Endo 3.5%

Endo → Surgery 0.4%

Follow up:

Median 2.7 years

Maximum 7.0 years

Lost to Follow up:

Surgery 9.5%

Endo 8.9%

Withdrawn:

Surgery 13.1%

Endo 8.4%

ENROLAMIENTO SE QUEDO SIN FINANCIACION INICIAL

Baseline Demographic Characteristics - Cohort 1

Characteristic	Cohort 1: SSGSV (n=1434)			
	Surgery (n=718)		Endo (n=716)	
Age, years (mean, SD)	66.9±9.9		67.0±10.0	
Female	201	28.0%	207	28.9%
Hispanic	82	11.4%	105	14.7%
White	500	70.3%	528	74.2%
Black	156	21.9%	119	16.7%
Asian	13	1.8%	7	1.0%
Other	42	5.9%	58	8.1%
Ischemic rest pain alone	146	20.3%	145	20.3%
Tissue loss	572	79.7%	571	79.8%
Significant Tibial Disease	479	66.7%	480	67.0%
Current smoking	264	37.1%	245	34.4%
Prior intervention index leg	40	5.6%	37	5.2%
Diabetes	513	72.1%	510	71.6%
End-stage renal disease	67	9.4%	84	11.8%

Edad media : 66 años

Porcentaje mujeres: 28%

Hispanos: 11-14%

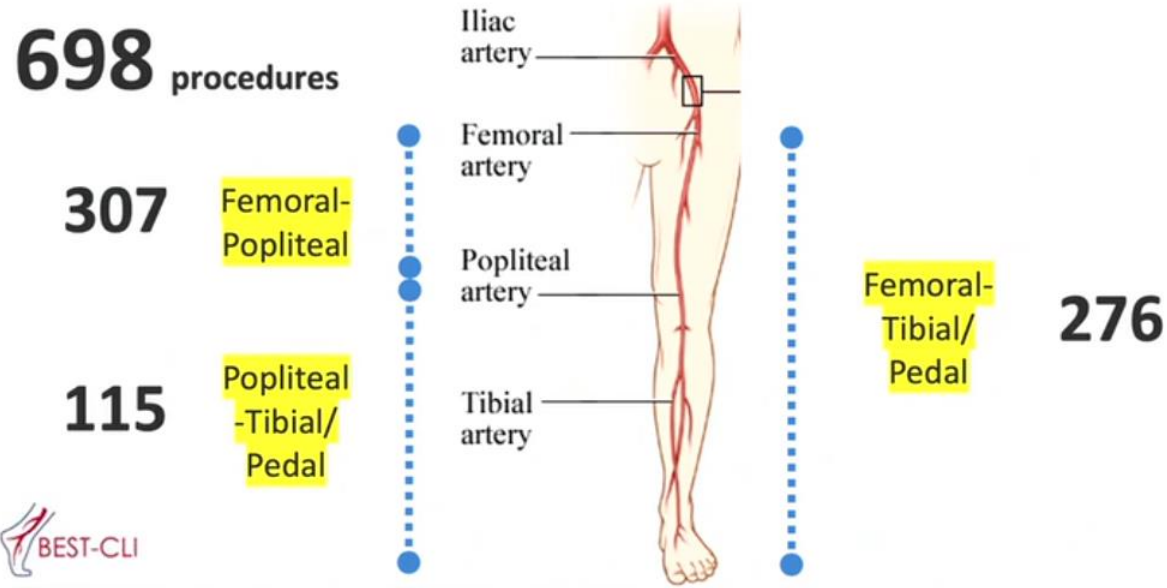
Diabetes: 72% (C 1), 60% (C 2)

Enfermedad renal en etapa terminal: 11%

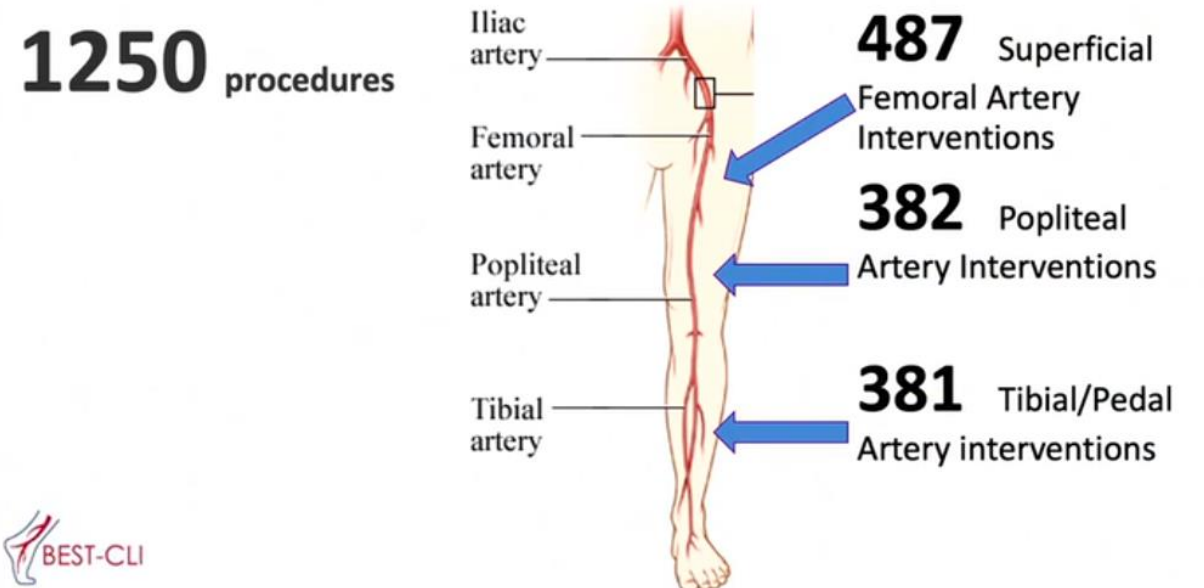
Enfermedad IP: 67%

**Uso basal de medicamentos:
estatinas (70%), aspirina
(67%), clopidogrel (22%)**

Cohort 1: Revascularization Procedures - Bypass

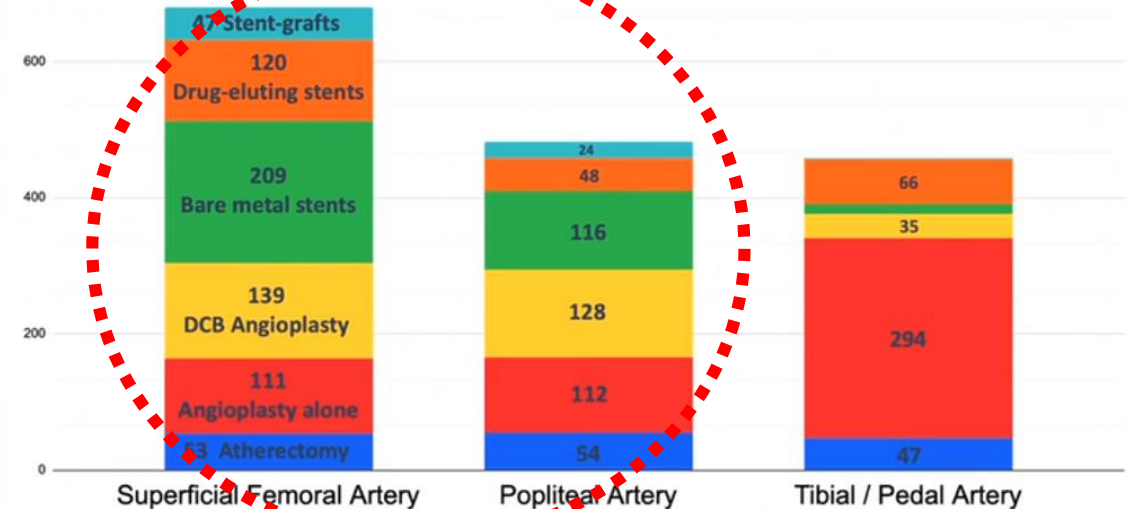


Cohort 1: Revascularization Procedures - Endovascular



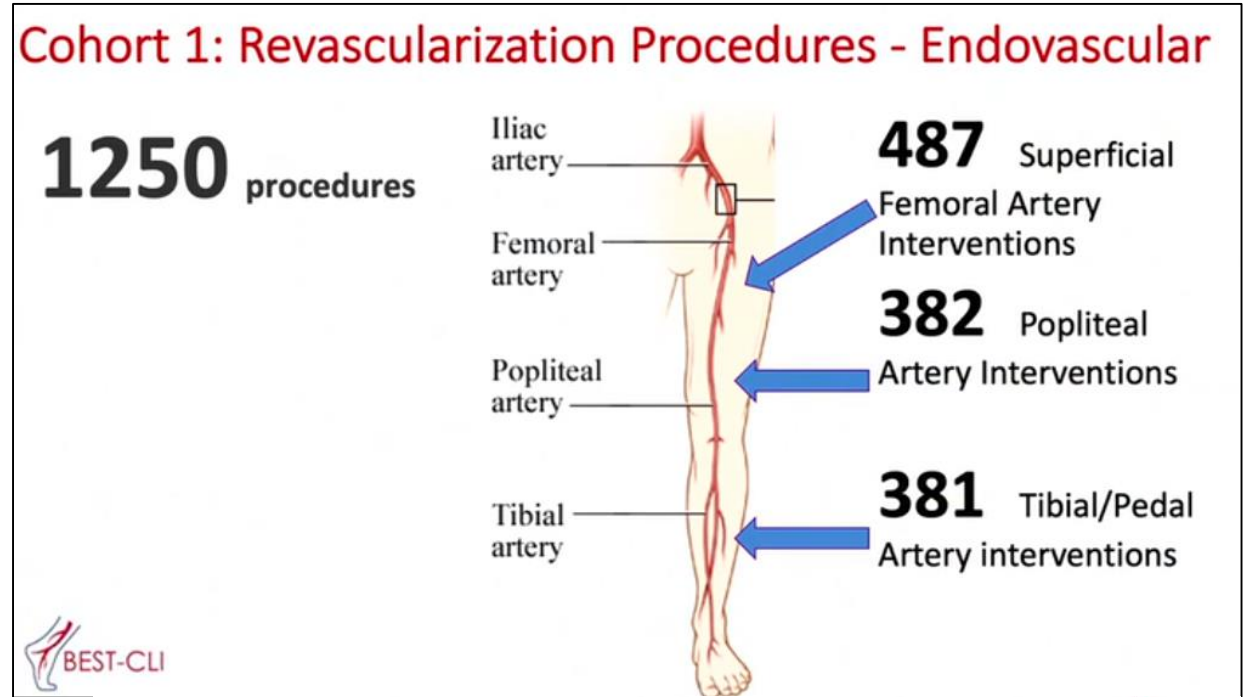
67% de enf tibial...??

Endovascular Interventions

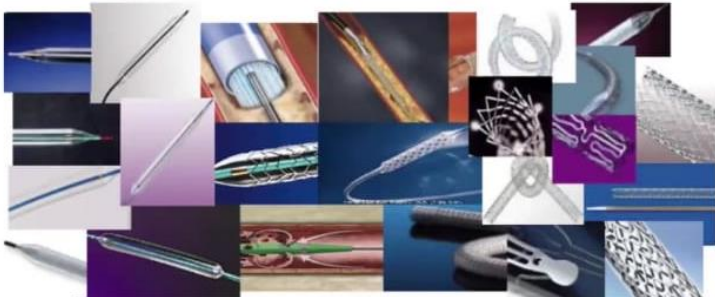


Arsenal Terapéutico para el eje fémoro-poplíteo

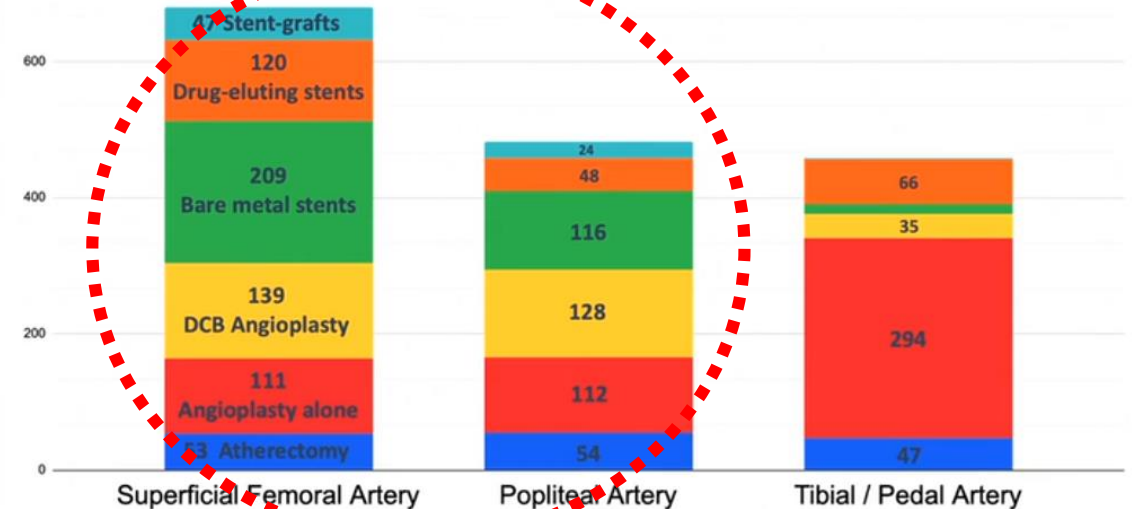
- ✓ *Balones medicados*
- ✓ *Stents medicados*
- ✓ *Stents dedicados para flexión*
- ✓ *Aterectomía*
- ✓ *Dispositivos para oclusiones totales*
- ✓ *Accesos complejos*



Management of peripheral arterial disease: my approach to femoro-popliteal lesion



Endovascular Interventions



RESULTS

Primary Endpoint, and Components of the Primary Endpoint - Cohort 1

	Surgery (n=709)		Endovascular (n=711)		HR (95%CI)	P-value
Primary						
MALE or all cause death	302	42.6%	408	57.4%	0.68 (0.59,0.79)	<0.001
Secondary						
Major Reintervention on the Index Limb	65	9.2%	167	23.5%	0.35 (0.27,0.47)	<0.001
Above-ankle amputation of the index limb	74	10.4%	106	14.9%	0.73 (0.54,0.98)	0.04
All cause death	234	33.0%	267	37.6%	0.98 (0.82,1.17)	0.81

RRR 32%

RRR 65%

RRR 27%

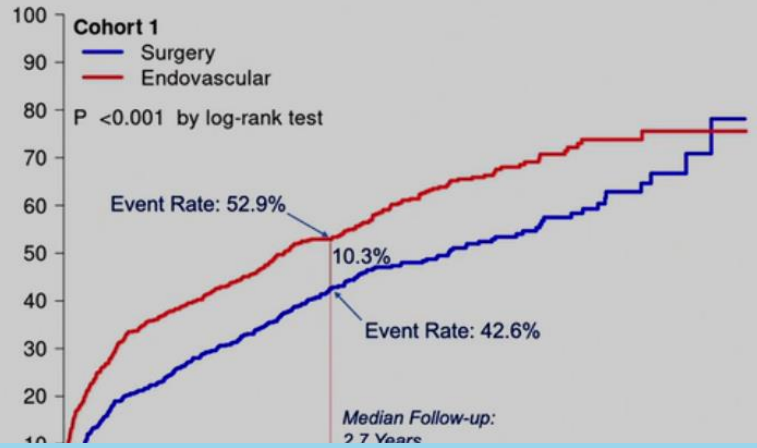
Safety					
Major adverse cardiovascular event — no. of patients with ≥1 event/total no. of patients (%)					
Event ≤30 days after procedure¶		33/718 (4.6)	23/716 (3.2)	1.46 (0.86–2.50)	0.16
Event during follow-up		269/718 (37.5)	309/716 (43.2)	0.94 (0.80–1.11)	0.48
No. of events ≤30 days after index procedure			427	379	0.10
No. of patients with ≥1 event/total no. of patients (%)			590/718 (82.2)	614/716 (85.8)	0.07
No. of events during follow-up			3141	3468	<0.001
Technical success of index procedure — no./total no. (%)**			651/662 (98.3)	596/704 (84.7)	
Technical success of index procedure — no./total no. (%)					
Length of hospital stay after index procedure††					
No. of days		7.5±6.2	5.9±7.3		
Median no. of days (IQR)		6 (4–9)	3 (1–8)		

Technical success of index procedure — no./total no. (%)**

!!

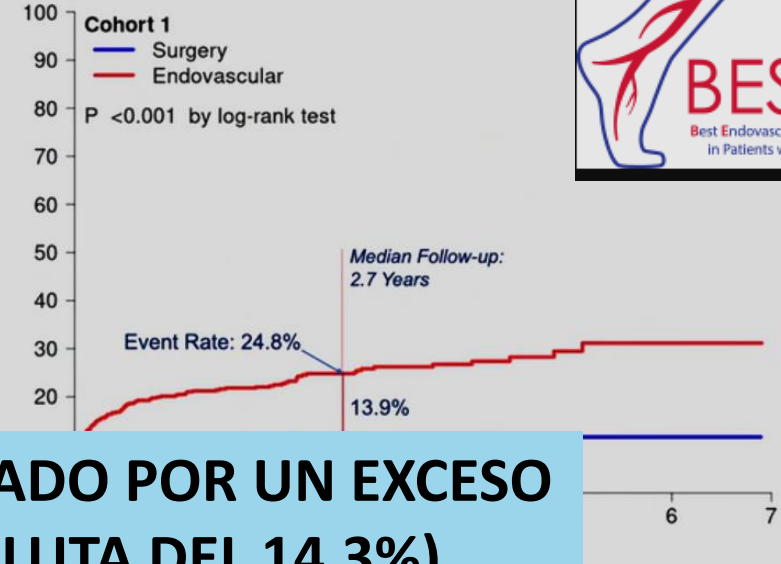
Primary Endpoint

MALE (Major Re-intervention, or Above-Ankle Amputation) or All-cause Death (%)



Primary Endpoint Component

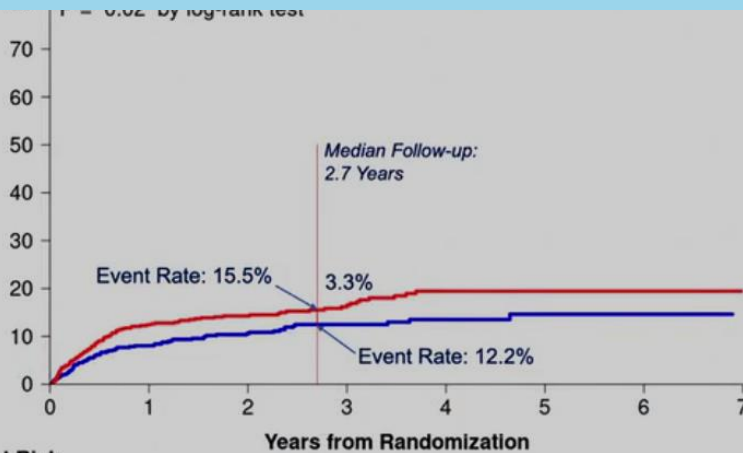
Major Re-intervention (%)



EPP REDUCCIÓN DEL RIESGO ABSOLUTO FUE DADO POR UN EXCESO DE REINTERVENCIONES (DIFERENCIA ABSOLUTA DEL 14,3%) REINTERVENCIONES FUERON DADAS POR UN EXCESO DE FALLA TECNICA (15% ENDO COHORTE 1)

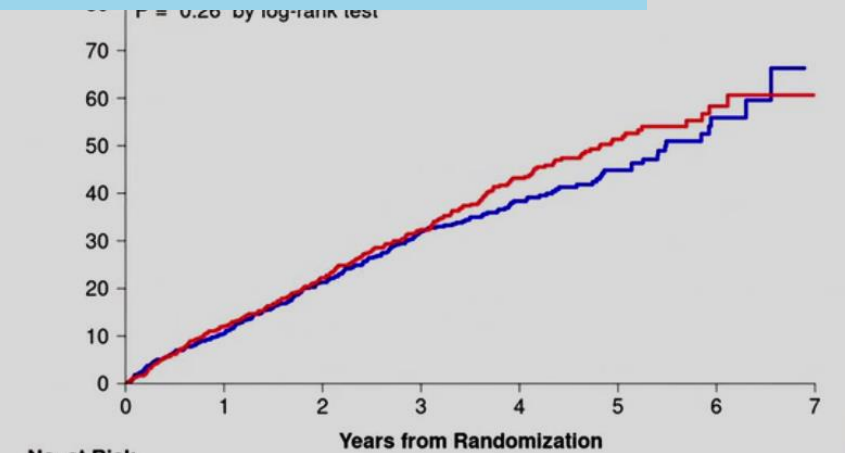
Primary Endpoint Component

Above-Ankle Amputation (%)



Component

Death (%)



R
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Primary Endpoint, and Components of the Primary Endpoint - Cohort 2						
	Surgery (n=194)		Endovascular (n=199)		HR (95%CI)	P-value
Primary						
MALE or all cause death	83	42.8%	95	47.7%	0.79 (0.58,1.06)	0.12
Secondary						
Major Reintervention on the Index Limb	28	14.4%	51	25.6%	0.47 (0.29,0.76)	0.002
Above-ankle amputation of the index limb	29	14.9%	28	14.1%	1.10 (0.65,1.87)	0.72
All cause death	51	26.3%	48	24.1%	1.15 (0.77,1.72)	0.50

NS

Cohort 2:

Technical success: 100% vs. 80.6%

All-cause mortality: 25.9% vs. 24.1% (p > 0.05)

Above-ankle amputation of the index limb: 15.2% vs. 14.1% (p > 0.05)

Major intervention in index limb: 14.2% vs. 25.6% (p > 0.05)

Perioperative mortality: 2.6% vs. 0.5% (p > 0.05)

MI: 8.6% vs. 9.5%, stroke: 2.5% vs. 3.5%

LIMITACIONES



- Enrolamiento lento (**SESGO DE SELECCION**, del operador y familia/paciente en enrolamiento e intervención)
- **SESGO DEL CENTRO** interviniente (Mayoría Cirujanos, centros netamente Qx, pueden favorecer una técnica u otra)
- Complejidad Anatómica no esta clara.
- **15 % de FALLA TECNICA**. No especificaciones técnicas de grupo endo (acceso retrogrado, sistema reentrada)
- **CIRUJANOS** en su mayoría (mejores resultados quirúrgicos y no tan familiarizados con endovascular?)
- Alta tasa de **MORTALIDAD** para los procedimientos endovasculares, (cirujanos realizaron la terapia endovascular bajo anestesia general??)
- Altas tasas de **ANGIOPLASTIA CON BALÓN SIMPLE (POBA)** y uso de dispositivos con droga (efx Katsanos??) y aterectomía muy bajo (**NO CUMPLE CON LOS ESTANDARES DE LA MEJOR ATC**)
- Efecto pandemia ?? Retraso en los controles , falta de controles cara a cara?



Los resultados de BASIL-2 se presentaron en el Simposio Internacional Charing Cross el 25 de abril de 2023 y se publicaron simultáneamente en The Lancet.

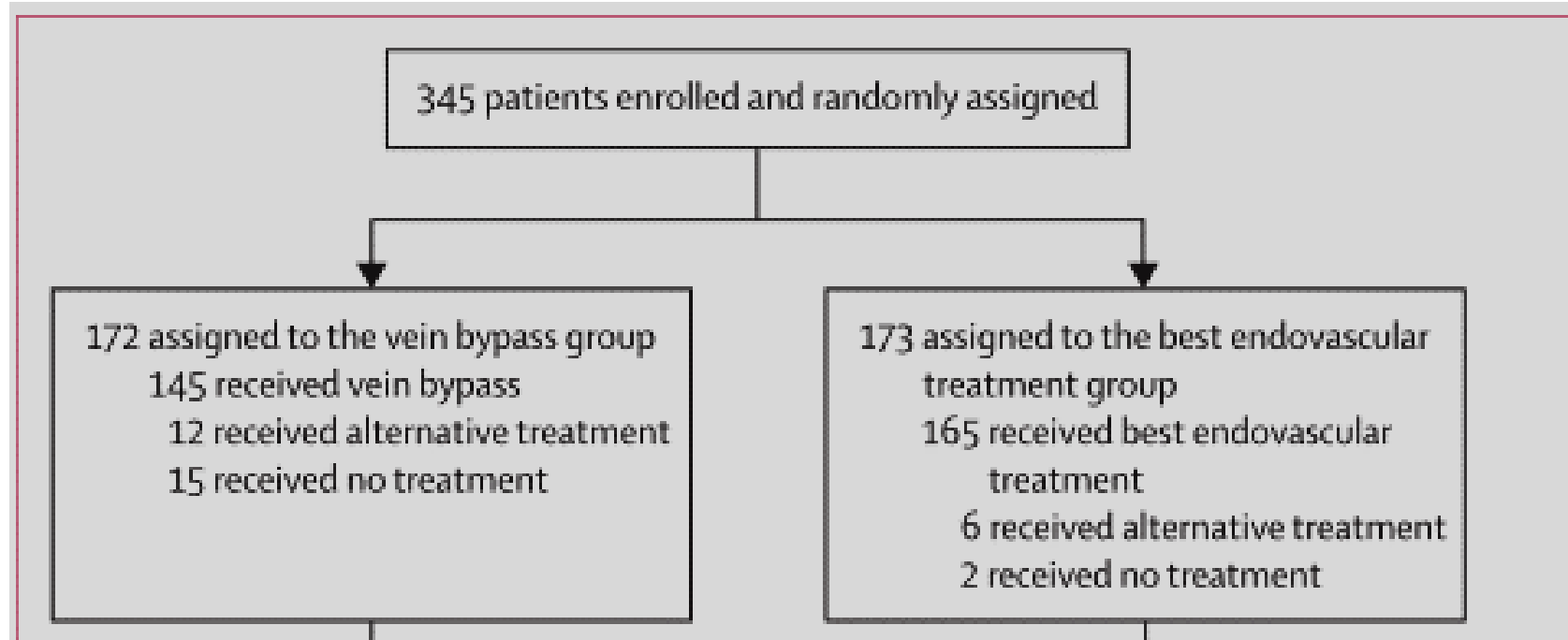


A vein bypass first versus a best endovascular treatment first revascularisation strategy for patients with chronic limb threatening ischaemia who required an infra-popliteal, with or without an additional more proximal infra-inguinal revascularisation procedure to restore limb perfusion (BASIL-2): an open-label, randomised, multicentre, phase 3 trial



Andrew W Bradbury, Catherine A Moakes, Matthew Popplewell, Lewis Meecham, Gareth R Bate, Lisa Kelly, Ian Chetter, Athanasios Diamantopoulos, Arul Ganeshan, Jack Hall, Simon Hobbs, Kim Houlind, Hugh Jarrett, Suzanne Lockyer, Jonas Malmstedt, Jai V Patel, Smitaa Patel, S Tawqeer Rashid, Athanasios Saratzis, Gemma Slinn, D Julian A Scott, Hany Zayed, Jonathan J Deeks, on behalf of the BASIL-2 Investigators

- ENTRE JULIO 2014 - NOVIEMBRE 2020, **345 PACIENTES** (en 6 AÑOS con 41 centros de EUROPA-39 UK) – MAYORIA ERAN RX INTERVENCIONISTAS



- El objetivo del ensayo fue evaluar la derivación venosa en comparación con el tratamiento endovascular en pacientes con isquemia crónica que amenaza las extremidades (CLI) debido a ENFERMEDAD INFRAPOPLÍTEA (con o sin una intervención infra inguinal más proximal adicional)



En el grupo de tratamiento QX, la utilización de vena o de injerto compuesto fue a discreción del medico

En el grupo de tratamiento endovascular, los pacientes recibieron angioplastia con balón con uso selectivo de stents metálicos o dispositivos liberadores de fármacos.

	Vein bypass group (n=172)	Best endovascular treatment group (n=173)
Sex*		
Female	33 (19%)	32 (18%)
Male	139 (81%)	141 (82%)
Median age, years	72.4 (64.3-78.7)	72.5 (62.7-79.7)
Age groups (years)*		
≤60	38 (22%)	36 (21%)
61-70	42 (24%)	44 (25%)
71-80	61 (35%)	58 (34%)
>80	31 (18%)	35 (20%)
Race		
White	157 (91%)	158 (91%)
Black	8 (5%)	9 (5%)
Asian	5 (3%)	5 (3%)
Other†	1 (1%)	0
Declined to provide or missing	1 (1%)	1 (1%)
Country of recruitment		
UK	147 (85%)	146 (84%)
Sweden	18 (11%)	18 (10%)
Denmark	7 (4%)	9 (5%)
Diabetes		
Patients with diabetes*	117 (68%)	120 (69%)
Patients with insulin dependent diabetes	62/117 (53%)	61/120 (51%)
No data	0	1/120 (1%)

Patients with chronic kidney disease*‡	58 (34%)	60 (35%)
Severity of clinical disease on the trial leg*		
Rest or night pain only	22 (13%)	19 (11%)
Tissue loss only	39 (23%)	32 (18%)
Both	111 (64%)	122 (71%)
Trial leg interventions		
Previous (permissible) intervention to the trial leg*§	20 (12%)	22 (13%)
Unknown	77 (45%)	76 (44%)
Hybrid procedure planned*§	4 (2%)	4 (2%)
Unknown	77 (45%)	76 (44%)
Leg enrolled in the trial		
Right	74 (43%)	95 (55%)
Left	98 (57%)	78 (45%)
BMI		
Data available	149 (87%)	154 (89%)
No data	23 (13%)	19 (11%)
BMI (kg/m ²)	27.1 (4.9)	26.8 (5.5)
Estimate glomerular filtration rate (mL/min per 1.73 m ²)	66.5 (23.2)	67.6 (24.3)
Living arrangement		
Own home	135 (78%)	142 (82%)
Other acute hospital	1 (1%)	1 (1%)
Residential home	0	1 (1%)
Nursing home	0	1 (1%)
Other	8 (5%)	6 (4%)
No data	28 (16%)	22 (13%)



Smoking status		
Never	58 (34%)	48 (28%)
Ex-smoker	75 (44%)	92 (53%)
Current	38 (22%)	33 (19%)
No data	1 (1%)	0

Medical history

Previous stroke	25 (15%)	34 (20%)
Missing	1 (1%)	0
Previous myocardial infarction	41 (24%)	23 (13%)
Missing	1 (1%)	0
Previous angina	22 (13%)	21 (12%)
Missing	1 (1%)	1 (1%)
Previous CABG	22 (13%)	15 (9%)
Missing	1 (1%)	0
Previous PCI	23 (13%)	17 (10%)
Missing	1 (1%)	2 (1%)
Previous dialysis	10 (6%)	5 (3%)
Missing	1 (1%)	0
Any previous vascular intervention to the trial leg	54 (31%)	67 (39%)
Missing	1 (1%)	0
Any previous vascular intervention to the non-trial leg	39 (23%)	58 (34%)
Missing	1 (1%)	0

Any antiplatelet use¶	131 (76%)	138 (80%)
Missing	3 (2%)	1 (1%)
Treatment for hypercholesterolaemia-	129 (75%)	138 (80%)
Missing	3 (2%)	2 (1%)
Treatment for hypertension	128 (74%)	129 (75%)
Missing	4 (2%)	1 (1%)
Any anticoagulant use	46 (27%)	50 (29%)
Missing	3 (2%)	2 (1%)
Used opiates	89 (52%)	81 (47%)
Missing	3 (2%)	1 (1%)

RESULTADOS

	Vein bypass group (n=172)	Best endovascular treatment group (n=173)	Estimate (95% CI)
Primary outcome			
No amputation-free survival	108 (63%)	92 (53%)	HR 1.35* (1.02 to 1.80); p=0.037
Secondary outcomes			
Death from any cause	34 (20%)	77 (45%)	HR 2.37* (1.33 to 4.27)
Major amputation	35 (20%)	32 (18%)	HR 1.23* (0.75 to 2.01)
30-day morbidity	70 (41%)	73 (42%)	RR 1.11† (0.89 to 1.38); uRD 0.06‡ (-0.04 to 0.16)
30-day mortality	10 (6%)	5 (3%)	RR 2.45† (0.84 to 7.20); uRD 0.03‡ (-0.01 to 0.07)
MALE	71 (41%)	77 (45%)	HR 0.93* (0.67 to 1.29); RR 0.94† (0.73 to 1.20); RD -0.04‡ (-0.15 to 0.06)
FEMALE	69 (40%)	75 (43%)	HR 1.36* (0.78 to 2.37); RR 0.95† (0.79 to 1.15); uRD -0.03‡ (-0.13 to 0.08)
24 months	21/99 (21%)	32/111 (29%)	OR 0.53¶ (0.20 to 1.43)
Subsequent intervention	50 (29%)	56 (32%)	RR 0.94† (0.68 to 1.28); uRD -0.02‡ (-0.12 to 0.06)
Reintervention	9 (5%)	33 (19%)	RR 0.27† (0.13 to 0.55); uRD -0.14‡ (-0.21 to -0.07)
Crossover intervention	46 (27%)	33 (19%)	RR 1.43† (0.94 to 2.18); uRD 0.08‡ (-0.01 to 0.17)

35%

MUERTE POR CAUSAS CARDIOVASCULARES Y RESPIRATORIAS

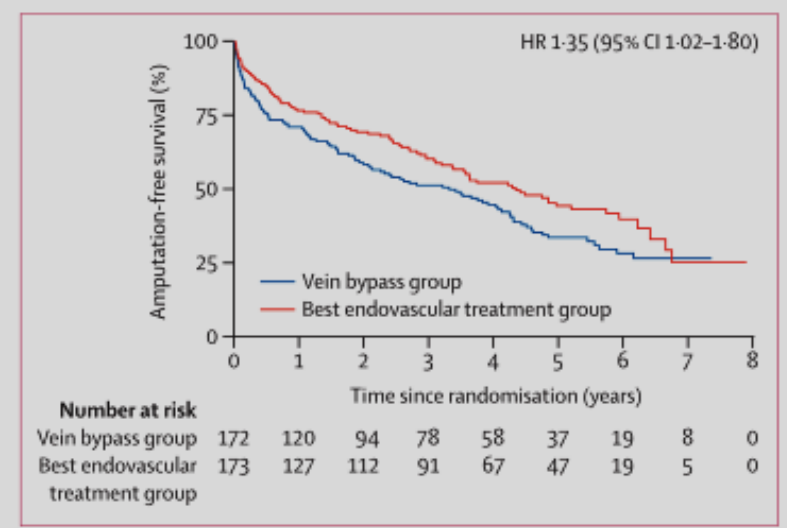
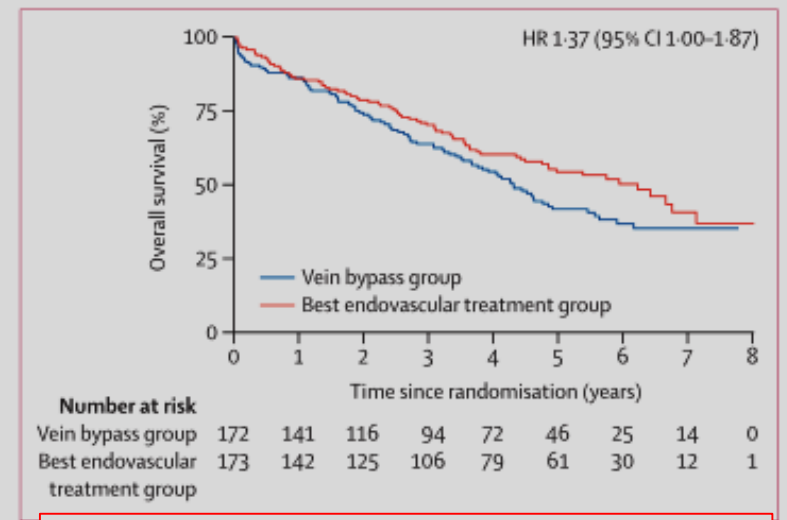


Figure 2: Amputation-free survival Kaplan-Meier curve
HR=hazard ratio.



FU 40 meses de promedio



Puntos a considerar...

- **N= 345 PACIENTES (<20% DEL TAMAÑOS DEL BEST CLI)**
- **CRITERIOS DE INCUSION MAS AMPLIOS**
- **BASIL2 POR DEFINICION REQUIEREN INTERVENCION INFRA POPLITEA!!! (BEST CLI 16% DE IP SOLA) (BASIL 2 DOBLE DE BY PASS DESDE LA A POPLITEA- 41% VS 16%)**
- **MAYOR MORTALIDAD A LARGO PLAZO EN GRUPO BY PASS**
- **ÉXITO TECNICO 87% (SIMILAR A BEST CLI)**
- **RESULTADOS QUIRURGICOS PEORES QUE EL BEST CLI**
- **POBLACIONES DIFERENTES (MAS AÑOSOS, MAS INFARTO PREVIO, EXPECTATIVA DE VIDA MENOR)**
- **AMBOS MAL TRATADOS previamente (ANTIAGREG-ESTATINAS)**

Que me dejaron...mis conclusiones



- ✓ **Planificación previa al procedimiento (disponibilidad de conducto venoso adecuado, incluir la candidatura quirúrgica y los deseos/calidad de vida del paciente/familia)**
- ✓ **El mejor tratamiento endovascular (nos representó?)**
- ✓ **Decisiones “de centro a centro, caso por caso”**
- ✓ **Alto riesgo de los pacientes de CLI (AMBOS TRIALS)**
- ✓ **Todavía necesitamos mejores terapias médicas.**
- ✓ **El resultado final del paciente con CLI no depende solamente de la revascularización.**
- ✓ **Costos??**

Que me dejaron...mis conclusiones



- ✓ Seguimos sin tener la mejor evidencia pero es la que tenemos.

MUCHAS GRACIAS

