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Artériopathie des membres inferieurs

D.Danzer

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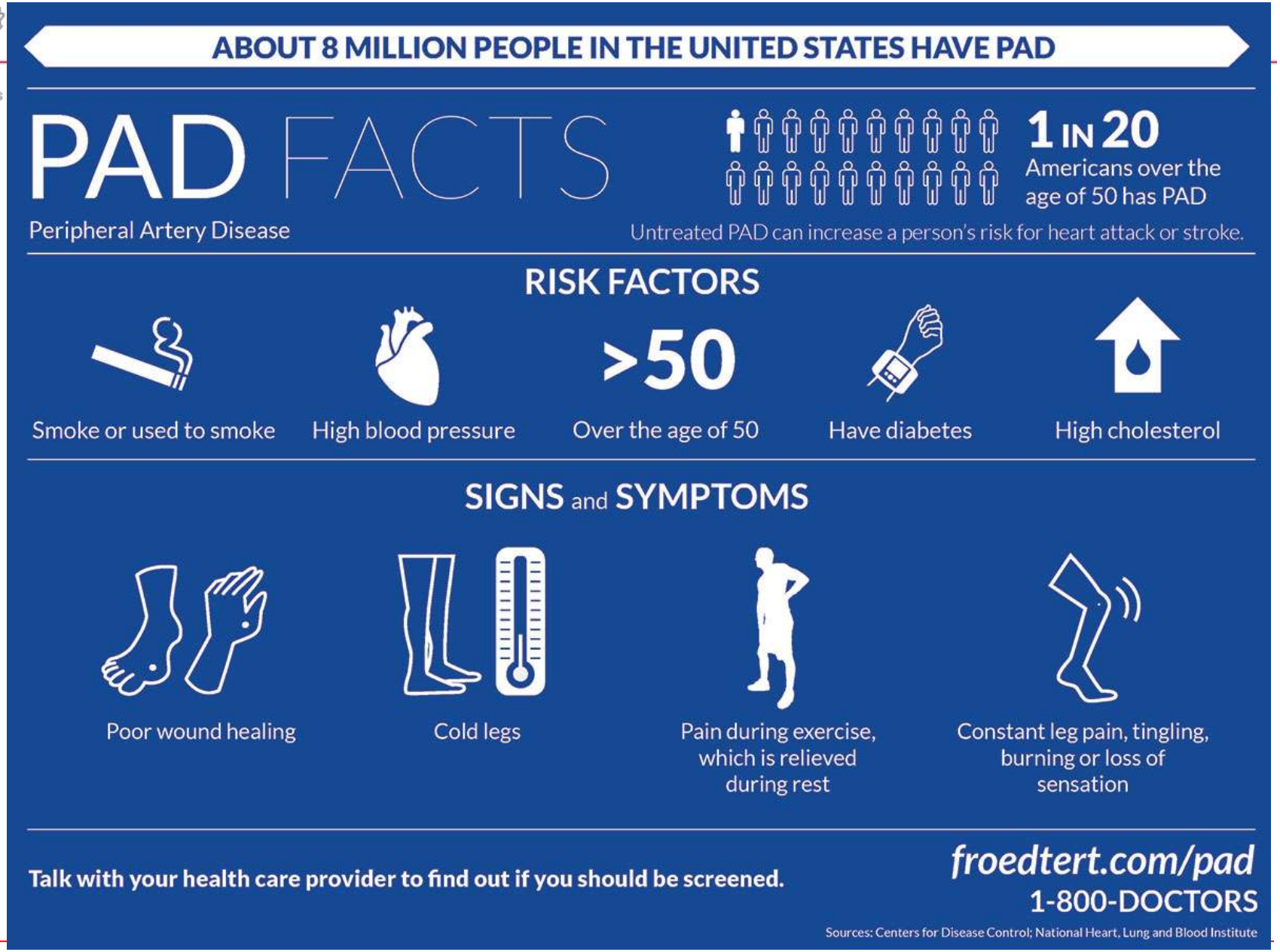

Prevalence

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Table II. A, Incidence population for peripheral arterial disease (*PAD*) and critical limb ischemia (*CLI*) subgroups: baseline demographic characteristics and comorbidities of the study population in 2004 to 2008

	Incidence population[a]			
Demographic characteristics	*PAD*[b] *(n = 228,468)*	*Secondary CLI*[c] *(n = 15,402)*	*Primary CLI*[d] *(n = 18,251)*	*Total*[e] *(N = 262,121)*
Age, mean ± SD years	68.9 ± 12.5	69.3 ± 12.6	69.0 ± 13.4	68.9 ± 12.6
Age group, years, %				
40-49	6.4	6.4	7.9	6.5
50-59	19.3	19.2	20.4	19.4
60-69	25.3	23.8	22.7	25.0
70-79	12.1	12.2	10.6	12.0
80-84	24.8	25.7	23.4	24.8
≥85	12.0	12.7	15.1	12.2
Gender, %				
Male	43.7	47.8	46.1	44.1
Female	56.3	52.2	53.9	55.9
Type of health plan, %				
Commercial	28.3	20.1	28.5	27.8
Medicaid	30.5	40.6	29.5	31.0
Medicare supplemental	41.2	39.3	42.0	41.2
Institutional SES comorbidity, %	4.1	9.7	9.1	4.5
Diabetes	14.7	31.6	28.5	16.7
Hypertension	72.2	70.9	66.5	71.7
Myocardial infarction	43.3	41.8	34.5	42.6
Stroke	19.7	22.0	19.0	19.8
Heart failure	21.6	30.0	25.6	22.4
Renal failure	8.9	13.3	11.0	9.3
Cancer	14.5	9.6	11.3	14.0

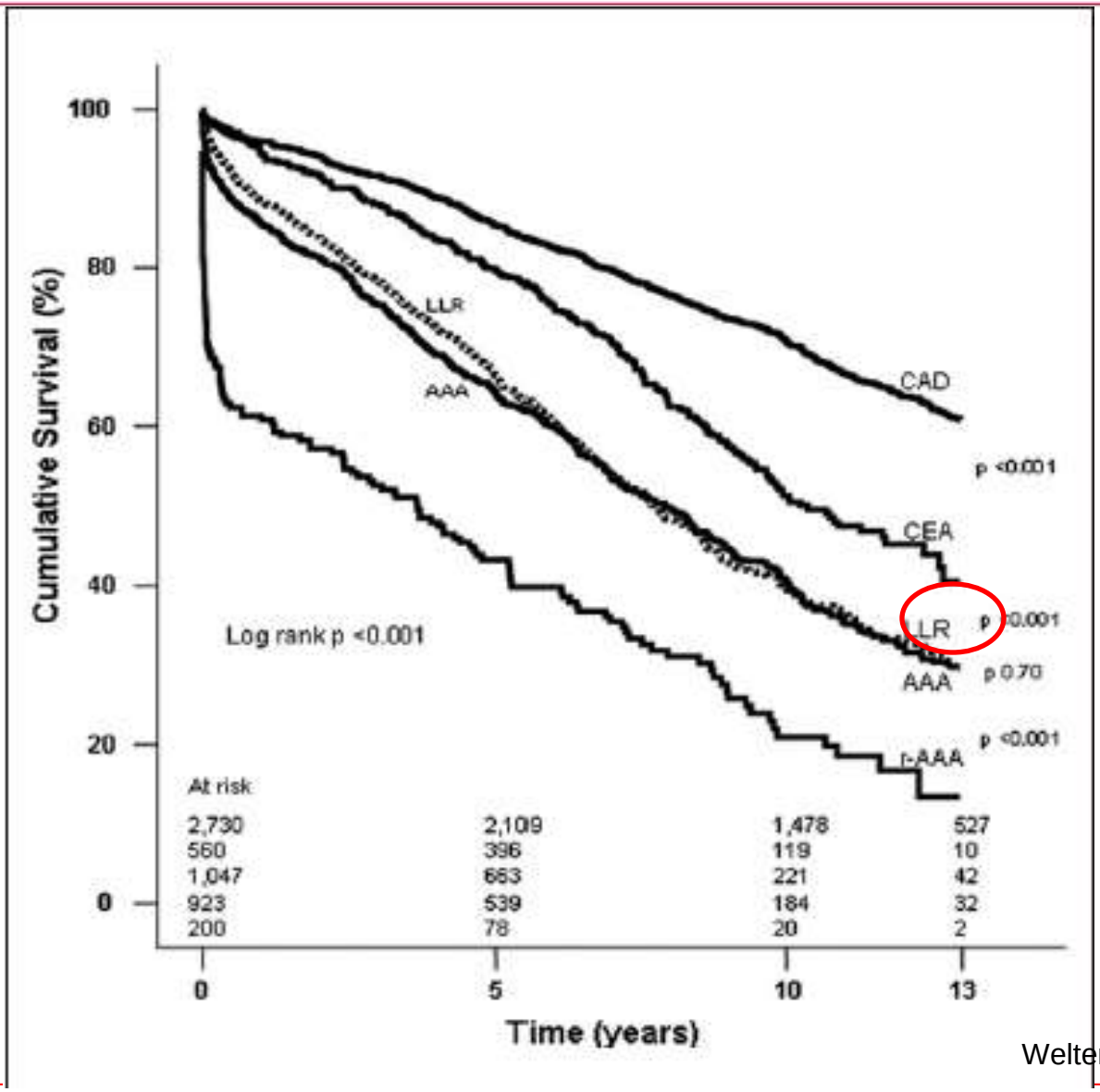
Prevalence IAMI ~10%, Critique ~1%

Nehler et al, JVS 2014

Incidence evolution

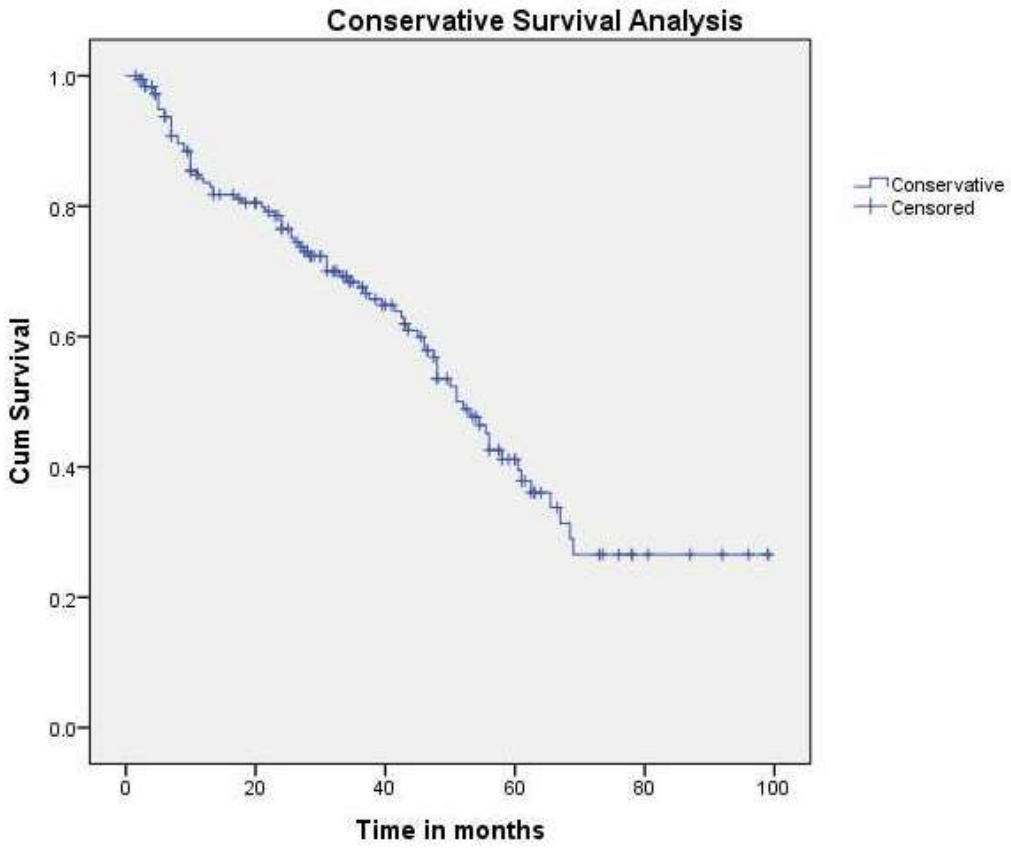
- **Allemagne 2005: 400 928 patients hospitalisés avec IAMI (2.67%)**
- **2015 : 483 961 patients (3%)**
- **-> augmentation d'un facteur 1.5 par rapport a l'augmentation du nb d'hospitalisation**
- **Augmentation la plus significative pour les stade IV (+32%)**

Survie des patient atteint d'IAMI



Welten et al JAAC 2008

CLI with non revascularisation strategy



Possagnoli et al Ann Vasc Surg 2016

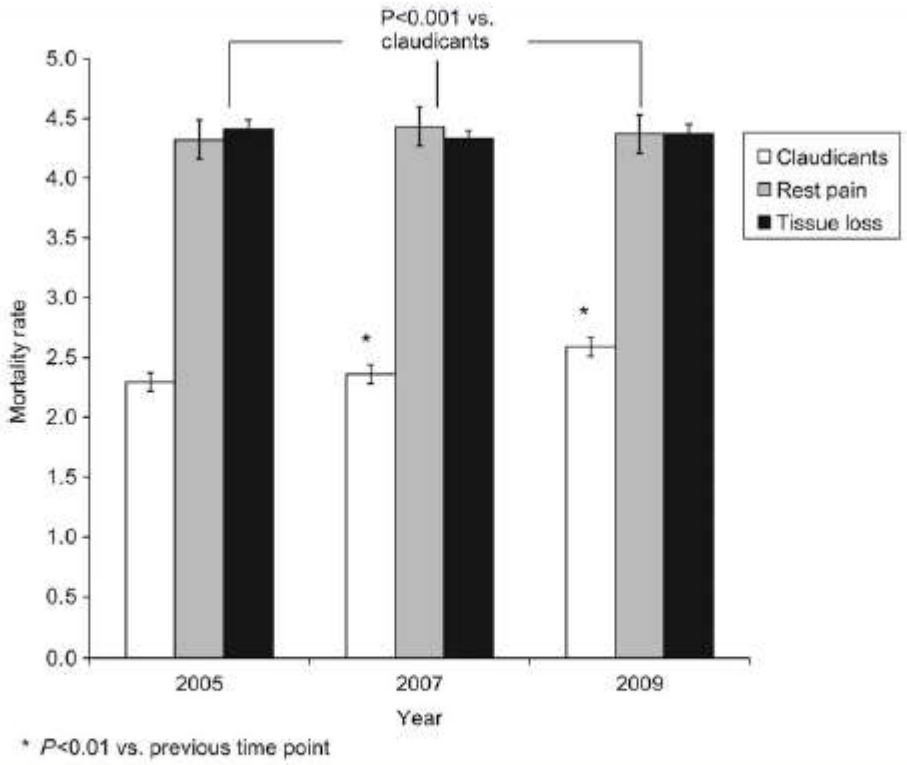
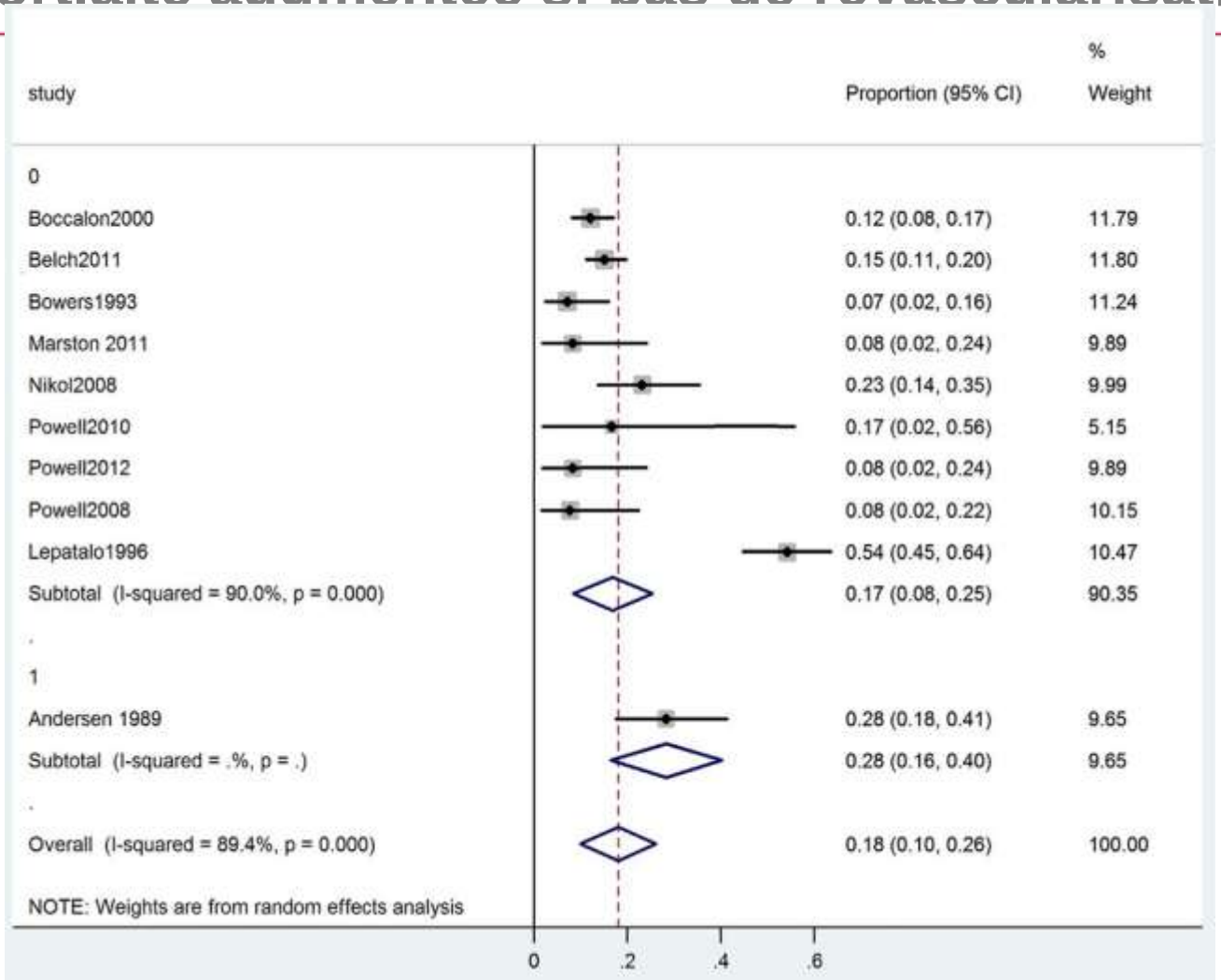


Figure 1 Mortality rates (*n*/1000 residence days/year, Poisson's regression model) among claudicants (white bars), patients with rest pain (grey bars) and those with tissue loss, i.e. Fontaine class IV (dark bars) for 2005, 2007, and 2009. Source: Research Data Centers of the Federal Bureau of Statistics and the statistical offices of the federal states, DRG-statistics 2005, 2007, and 2009, own calculations.

Maylar et al Eur Heart J 2013

Mortlaité augmentée si pas de revascularisation



Abu Dahbr et al Ann JVS2015

Facteurs de Risque Cardio Vasculaire

- **HTA**
- **Tabagisme**
- **Hypercholestérolémie**
- **Diabète**
- **Anamnèse familiale positive**

Facteurs Risque Artériopathie Périphérique (IAMI, PAOD)

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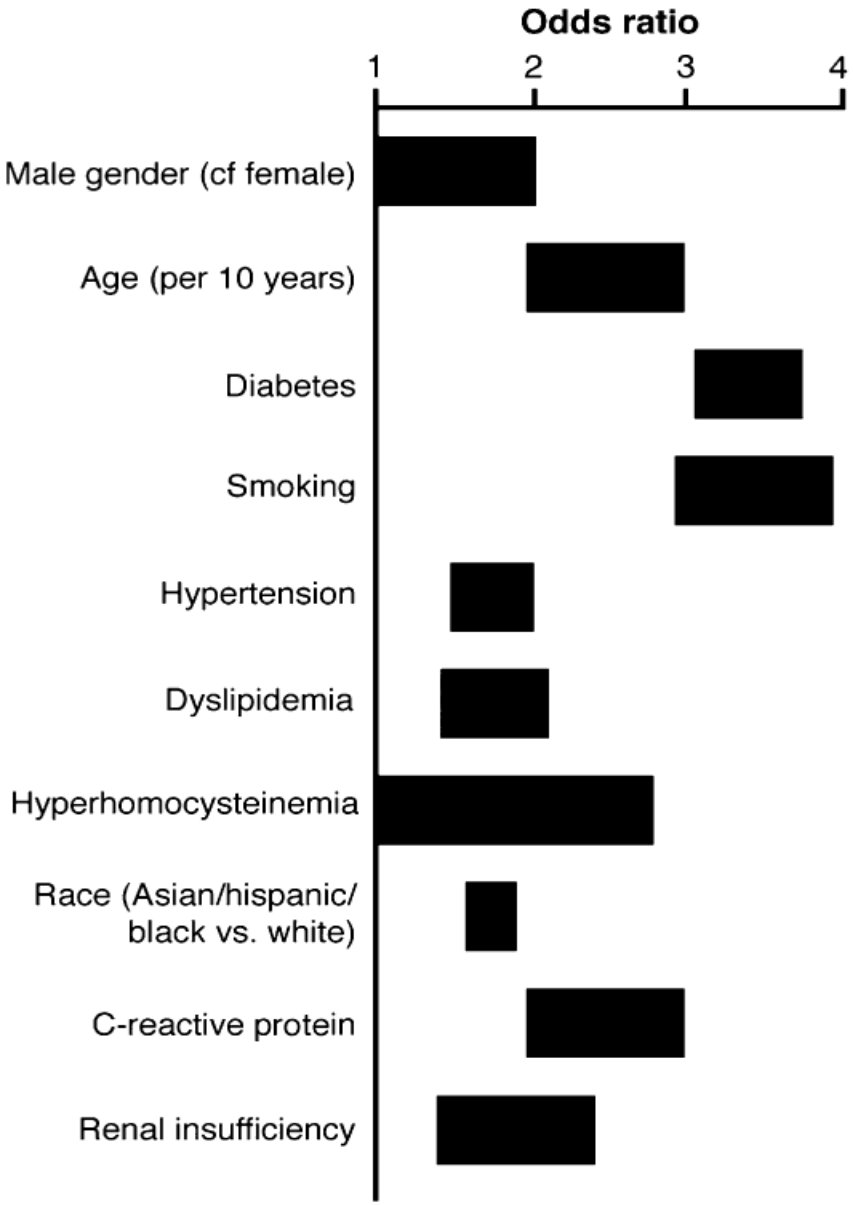
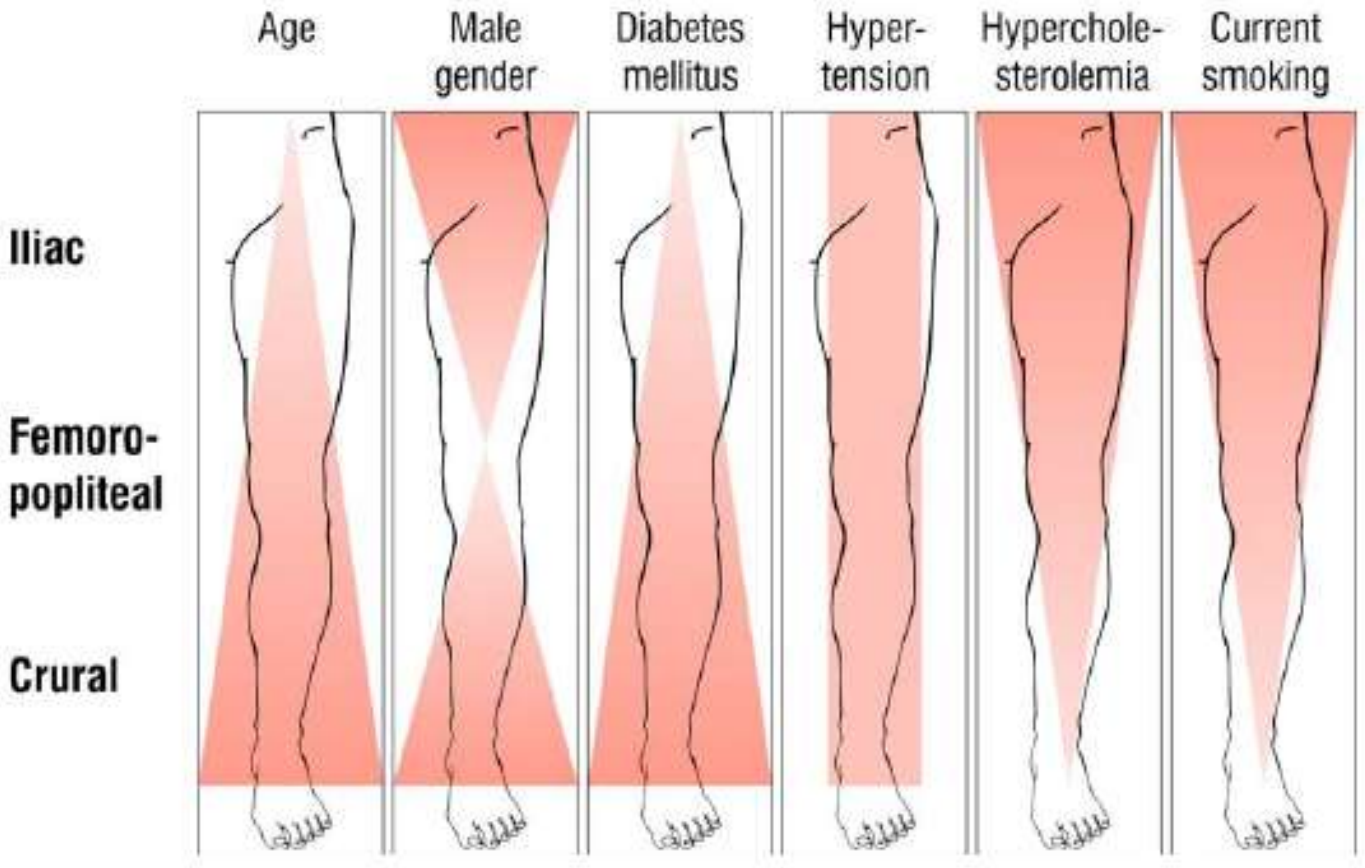
- **Sexe H 2-3x**
- **Age (prévalence 3% a 40ans, 6%60ans)**
- **Tabagisme 3-3.7x, + si actif**
- **Diabète (2-4x), +26% par %HbA1c**
- **Hypercholestérolémie 2x**
- **HTA**
- **Insuffisance rénale chronique**
- **Anamnèse familiale positive**
  - Hyperhomocysteinémie
  - Thrombophilie (pronostic)


Odds ratio
1
2
3
4
Male gender (cf female)
Age (per 10 years)
Diabetes
Smoking
Hypertension
Dyslipidemia
Hyperhomocysteinemia
Race (Asian/hispanic/ black vs. white)
C-reactive protein
Renal insufficiency

Topographie des lésions



Diehm et al, EJVES 2006

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Au cabinet

Diagnostic?

Diagnostic au cabinet

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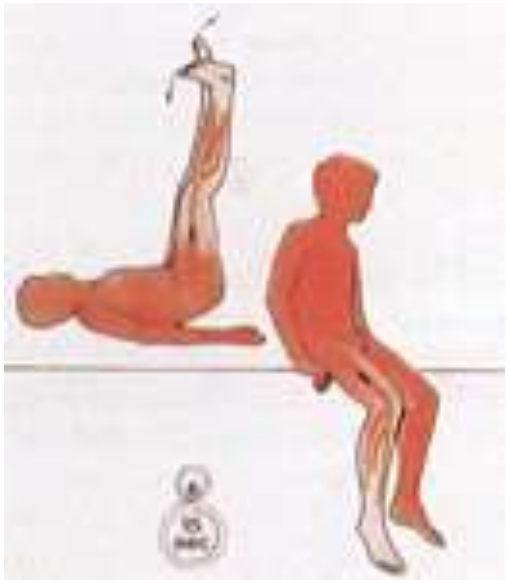

Anamnèse

Table C1. Differential diagnosis of intermittent claudication (IC)

Condition	Location	Prevalence	Characteristic	Effect of exercise	Effect of rest	Effect of position	Other characteristics
Calf IC	Calf muscles	3–5% of adult population	Cramping, aching discomfort	Reproducible onset	Quickly relieved	None	May have atypical limb symptoms on exercise
Thigh and buttock IC	Buttocks, hip, thigh	Rare	Cramping, aching discomfort	Reproducible onset	Quickly relieved	None	Impotence May have normal pedal pulses with isolated iliac artery disease
Foot IC	Foot arch	Rare	Severe pain on exercise	Reproducible onset	Quickly relieved	None	Also may present as numbness
Chronic compartment syndrome	Calf muscles	Rare	Tight, bursting pain	After much exercise (jogging)	Subsides very slowly	Relief with elevation	Typically heavy muscled athletes
Venous claudication	Entire leg, worse in calf	Rare	Tight, bursting pain	After walking	Subsides slowly	Relief speeded by elevation	History of iliofemoral deep vein thrombosis, signs of venous congestion, edema
Nerve root compression	Radiates down leg	Common	Sharp lancinating pain	Induced by sitting, standing or walking	Often present at rest	Improved by change in position	History of back problems Worse with sitting Relief when supine or sitting
Symptomatic Bakers cyst	Behind knee, down calf	Rare	Swelling, tenderness	With exercise	Present at rest	None	Not intermittent
Hip arthritis	Lateral hip, thigh,	Common	Aching discomfort	After variable degree of exercise	Not quickly relieved	Improved when not weight bearing	Symptoms variable History of degenerative arthritis
Spinal stenosis	Often bilateral buttocks, posterior leg	Common	Pain and weakness	May mimic IC	Variable relief but can take a long time to recover	Relief by lumbar spine flexion	Worse with standing and extending spine
Foot/ankle arthritis	Ankle, foot, arch	Common	Aching pain	After variable degree of exercise	Not quickly relieved	May be relieved by not bearing weight	Variable, may relate to activity level and present at rest

IC – intermittent claudication.

Stade de Fontaine (>2-3semaines)

I. Disparition des pouls périphériques, actu diminution objective de la perfusion périphériques sans symptômes

II. a.Claudication >200m

b.Claudication <200m

III: Douleur de repos

IV. Trouble trophique persistant (>3 sem)

Stades de Rutherford

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Table II. Clinical categories of chronic limb ischemia*

Grade	*Category*	*Clinical description*	*Objective criteria*
0	0	Asymptomatic—no hemodynamically significant occlusive disease	Normal treadmill or reactive hyperemia test
	1	Mild claudication	Completes treadmill exercise†; AP after exercise >50 mm Hg but at least 20 mm Hg lower than resting value
I	2	Moderate claudication	Between categories 1 and 3
	3	Severe claudication	Cannot complete standard treadmill exercise† *and* AP after exercise <50 mm Hg
II*	4	Ischemic rest pain	Resting AP <40 mm Hg, flat or barely pulsatile ankle or metatarsal PVR; TP <30 mm Hg
III*	5	Minor tissue loss—nonhealing ulcer, focal gangrene with diffuse pedal ischemia	Resting AP <60 mm Hg, ankle or metatarsal PVR flat or barely pulsatile; TP <40 mm Hg
	6	Major tissue loss—extending above TM level, functional foot no longer salvageable	Same as category 5

AP, Ankle pressure; *PVR,* pulse volume recording; *TP,* toe pressure; *TM,* transmetatarsal.

*Grades II and III, categories 4, 5, and 6, are embraced by the term chronic *critical* ischemia.

†Five minutes at 2 mph on a 12% incline.

- **FAUT-IL INVESTIR EN MATERIEL?**

Examen clinique ou index bras cheville en pratique

- **La présence de tous les pouls palpables et l'absence de souffle vasculaire**
- **Spécificité 98.3%, VPN 94.9%**

Armstrong et al, Can J Cardiol 2010

- **La spécificité le l'index Bras Cheville**
  - ~90% si faite avec oscillomètre
  - <60% avec doppler

Cochrane Database Syst Review 2016

Plethysmographie ?

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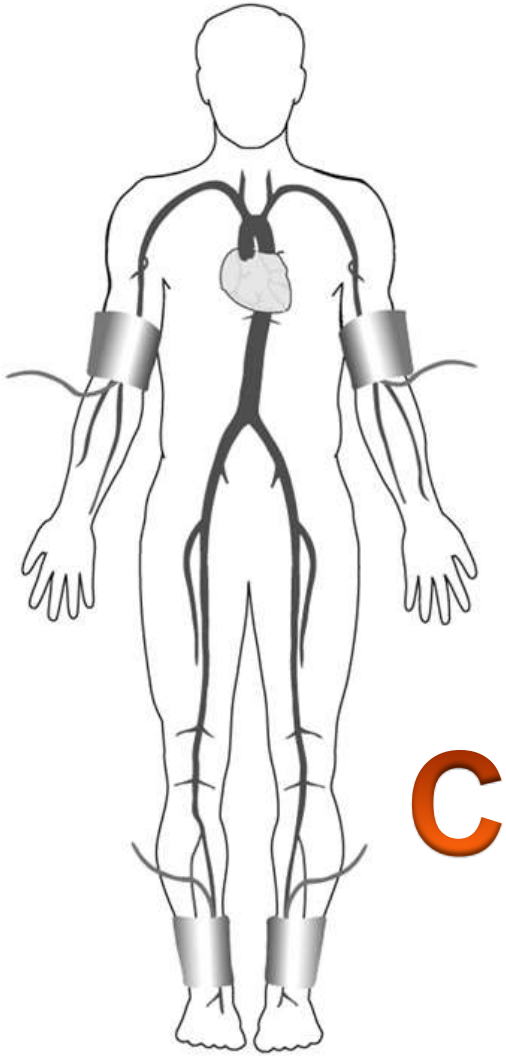

Right ABI = ratio of

Higher of the right ankle systolic pressures (posterior tibial or dorsalis pedis)

Higher arm systolic pressure (left or right arm)

Left ABI = ratio of

Higher of the left ankle systolic pressures (posterior tibial or dorsalis pedis)

Higher arm systolic pressure (left or right arm)

Coût du matériel

Fig. C1. Measurement of the ABI. ABI – ankle-brachial index.

Corrélation ABI symptômes

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Mauvaise correlation ABI-Perimètre de marche et impact sur la qualité de vie.

-> Pas de décision sur l'ABI uniquement

Lozano et al, Int J Clin Pract2014

En pratique l'ABI

- **Utile pour le suivi**
- **Aide au diagnostic (patient obèse, oedème, etc…)**
- **Ne remplace pas l'avis de l'angiologue**
- **CAVE: un signal présent ne signifie pas l'absence d'ischémie même aigue!**
- **Doute du clinicien → Avis angiologique**

Algorithme des investigations

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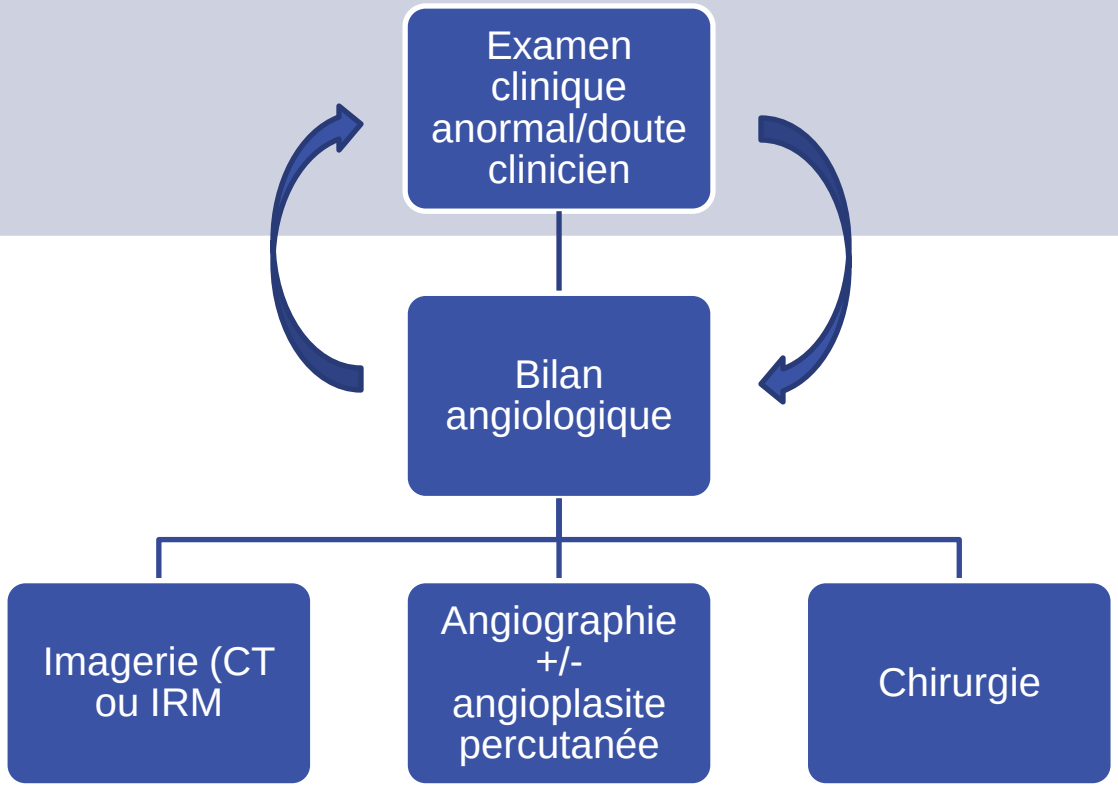
Plainte

- Claudication/douleurs de repos/plaie chronique,etc…



Ischémie critique/troubles trophiques

- **Déficit constant de perfusion**
  - Douleurs +/- typiques
  - Automatisme compensatoire/antalgique
    - Pied en position déclive, réveil nocturne, sol froid
- **Troubles trophiques**
  - Souvent banalisés
    - Patient
    - Entourage
    - **Soignants**

  CAVE: absence de douleurs chez :

  Diabétique

  Neuropathe:

  Vasculaire, OH, autre

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Aspects cliniques


www.ulcere-de-jambe.com
Dr F.Vin


www.ulcere-de-jambe.com
Dr F.Vin

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L’attitude générale – pas de démarche antalgique

Veineux ou arteriel

Atteinte des orteils

Hyperémie compensatrice au stade chronique

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Quel côté

?

?

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Insuffisance veineuse? Œdème digital

Livedo- Lividité

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Examen …complet

Livedo-Purpura cyanose localisée pouls palpables

Embols de cholesterol

Orteil douloureux

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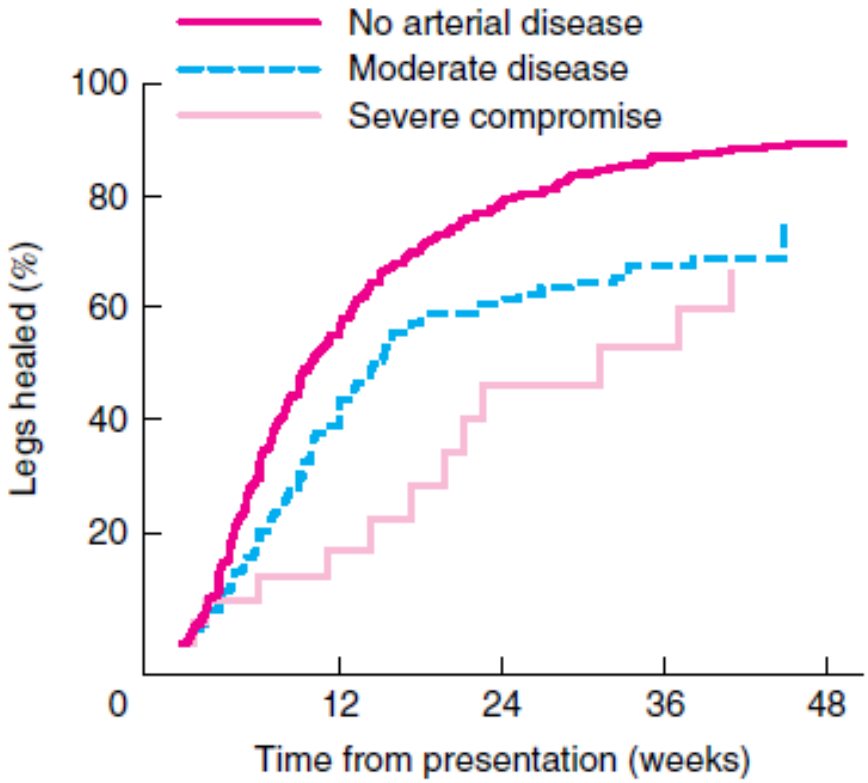
shop.com

Ulcère mixtes



Patient jeune… anamnèse

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But du traitement précoce…

Artériopathie atypique

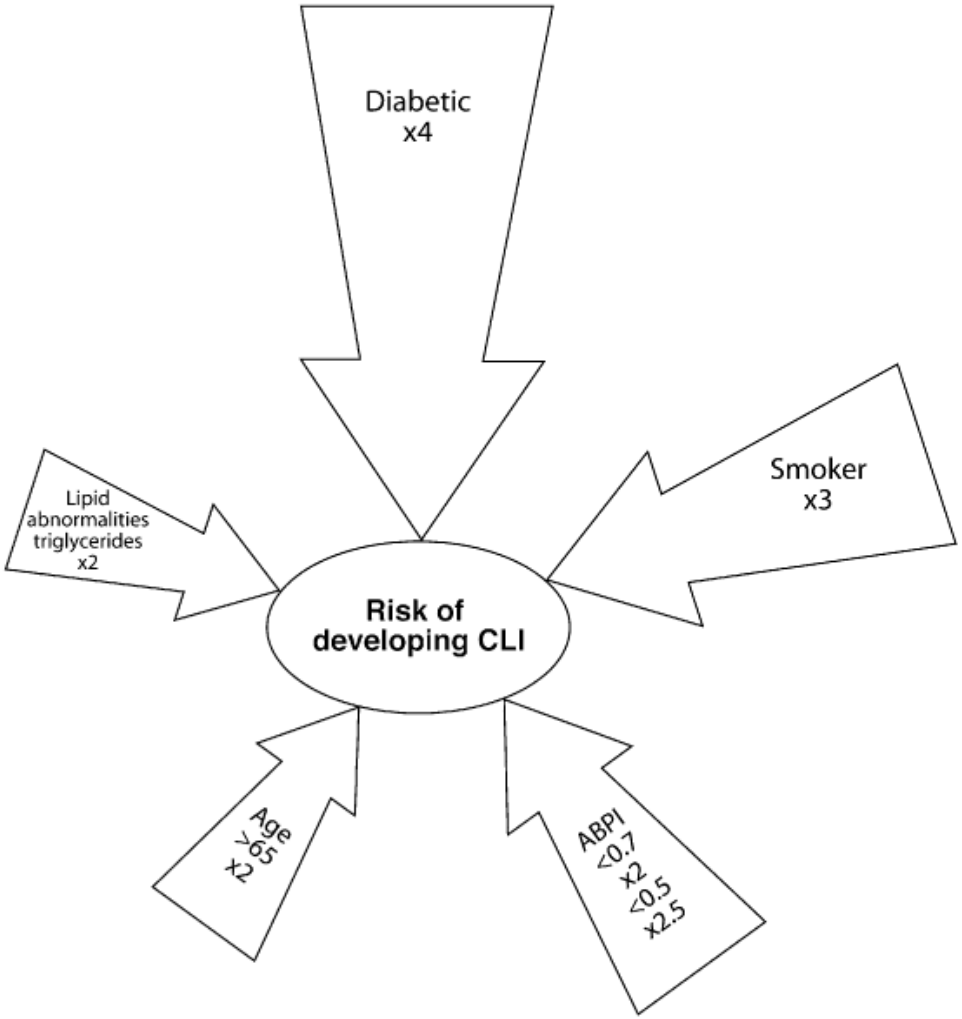
- **Jeune**
- **Absence de facteurs de risques**

- **-Bilan extensifs**
- **-Abstinence des traitements invasifs si possible avant bilan étiologique complet**

Table C2. Causes of occlusive arterial lesions in lower extremity arteries potentially causing claudication

Atherosclerosis (PAD)
Arteritis
Congenital and acquired coarctation of aorta
Endofibrosis of the external iliac artery (iliac artery syndrome in cyclists)
Fibromuscular dysplasia
Peripheral emboli
Popliteal aneurysm (with secondary thromboembolism)
Adventitial cyst of the popliteal artery
Popliteal entrapment
Primary vascular tumors
Pseudoxanthoma elasticum
Remote trauma or irradiation injury
Takayasu's disease
Thromboangiitis obliterans (Buerger's disease)
Thrombosis of a persistent sciatic artery

Ischémie chronique -> Critique (CLI)



Taux d'amputation avec/sans revascularisation

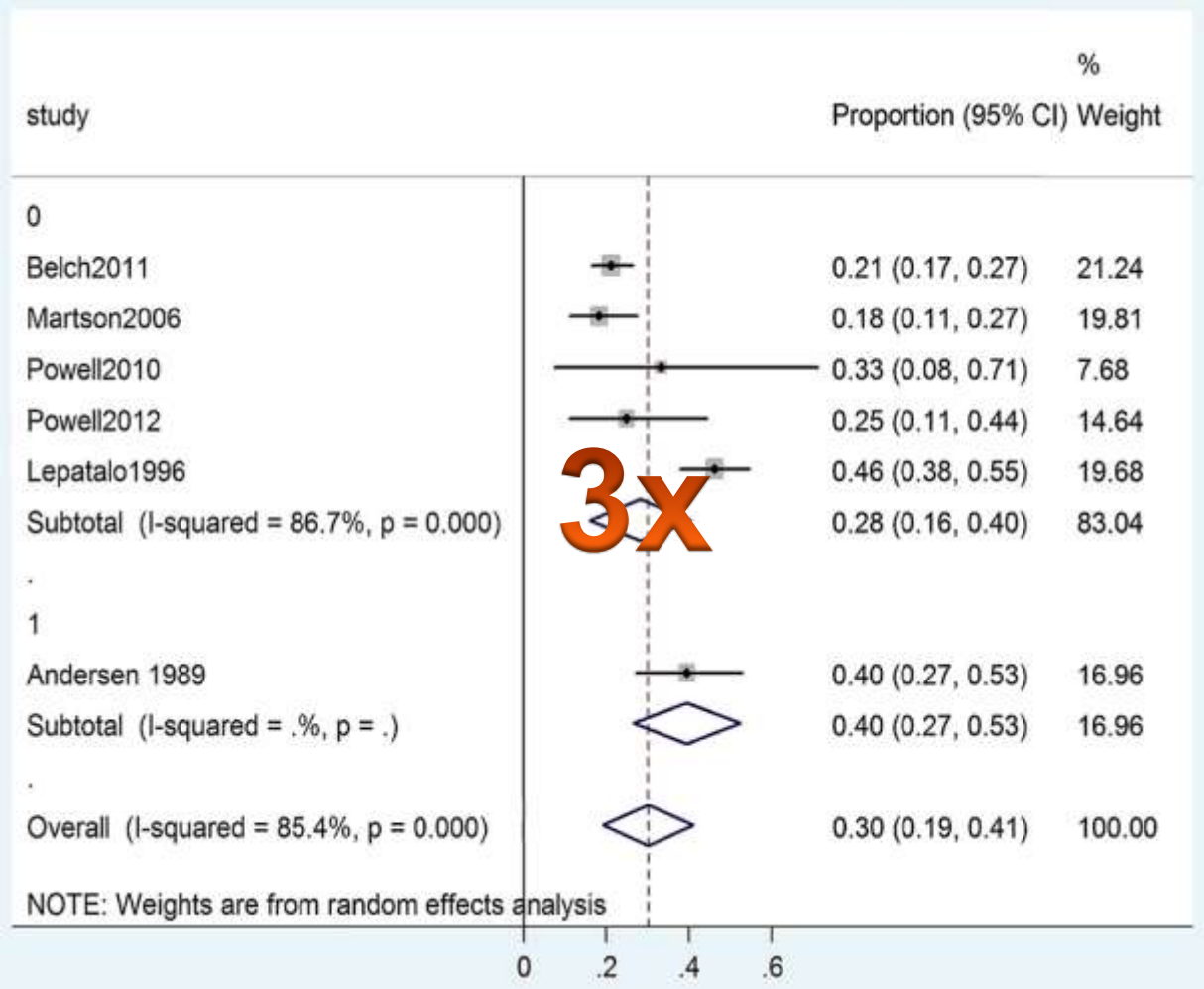


Fig 4. Meta-analysis of limb loss (unit of analysis ¼ number of limbs) in patients of untreated critical limb ischemia (CLI) with follow-up #2 years (0) and >2 years (1). CI, Confidence interval.

Abu Dabrh et al, JVS 2015

Choix du type de revascularisation

A-t-on jamais réellement le choix?

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Chirurgie ouverte VS Endovasculaire

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Résultat à moyen / long terme

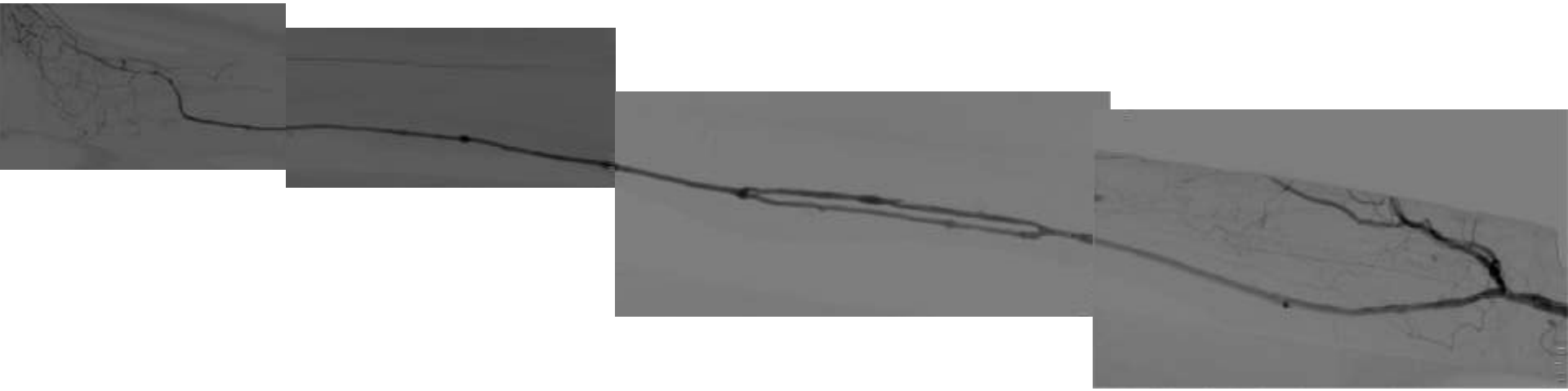
Etat général /local du patient

TASC II Classification
EJEVS Vol 33 S1 2007

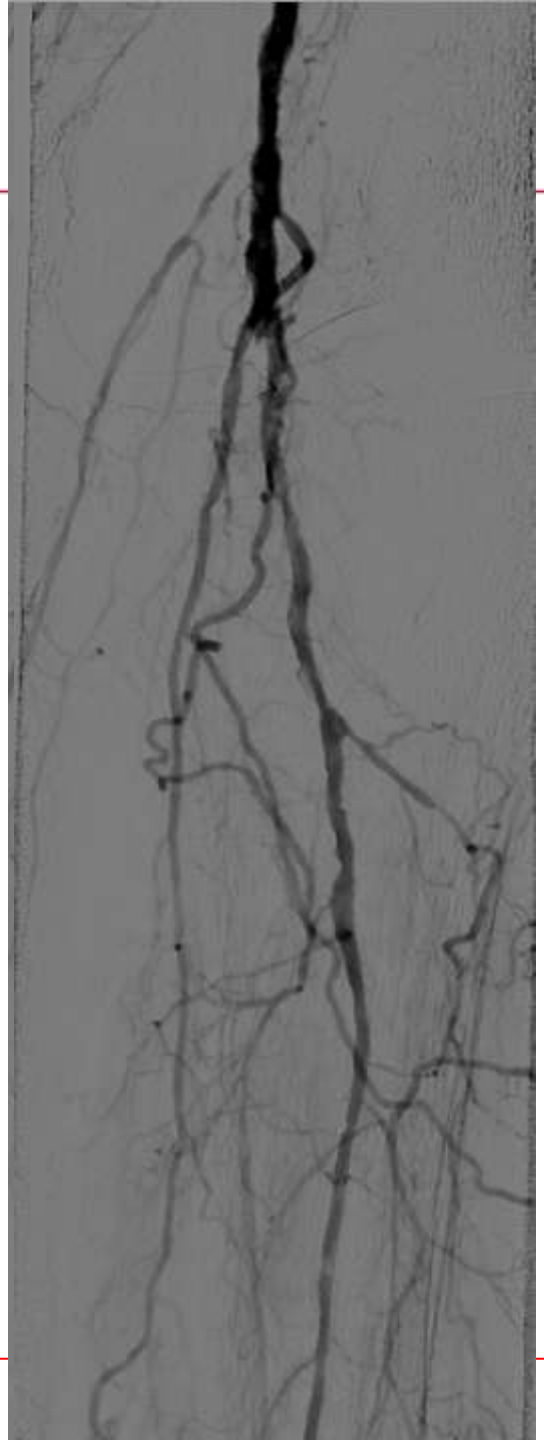
Percutané versus pontage

- **Temps de guérison endo>pontage**
  - 224j vs 180j (Joret et al JVS2016)
- **Si espérance de vie >2ans et présence d'une veine autologue endo<pontage** (Bradbury et al. JVS 2010 BASIL)
- **Coût Endo < Pontage si réussite primaire**
  - CAVE 3x plus d'intervention par plaie
  - CAVE Suivi!!

1927 Pontage fémoro pédieux



1941, dialysé, diabétique diminution progressive EG



Patient âgé et polymorbide

J Cardiovasc Surg (Torino). 2016 May 19. [Epub ahead of print]

Complex infra-popliteal revascularisation in octogenarians and nonagenarians with critical limb ischaemia: impact of multidisciplinary integrated care on mid-term outcome.

Biasi L[1], Patel SD, Lea T, Donati T, Katsanos K, Partridge JS, Dhesi JK, Zayed H.

CONCLUSION: IP revascularisation (either endovascular or surgical) is feasible and effective in octogenarians and nonagenarians with CLI. By adopting a patient-tailored approach, both revascularisation strategies have satisfactory technical and clinical outcomes in this high-risk group. Subgroup analysis suggests that bypass surgery may have better mid- term secondary patency and AFS rates.

Critical Chronic Peripheral Arterial Disease: Does Outcome Justify Crural or Pedal Bypass Surgery in Patients With Advanced Age or With Comorbidities?

Barbara Theresia Weis-Müller,[1] Viktor Römmler,[1] Ines Lippelt,[1] Mark Porath,[1] Erhard Godehardt,[2] Kai Balzer,[1] and Wilhelm Sandmann,[1] Düsseldorf, Germany

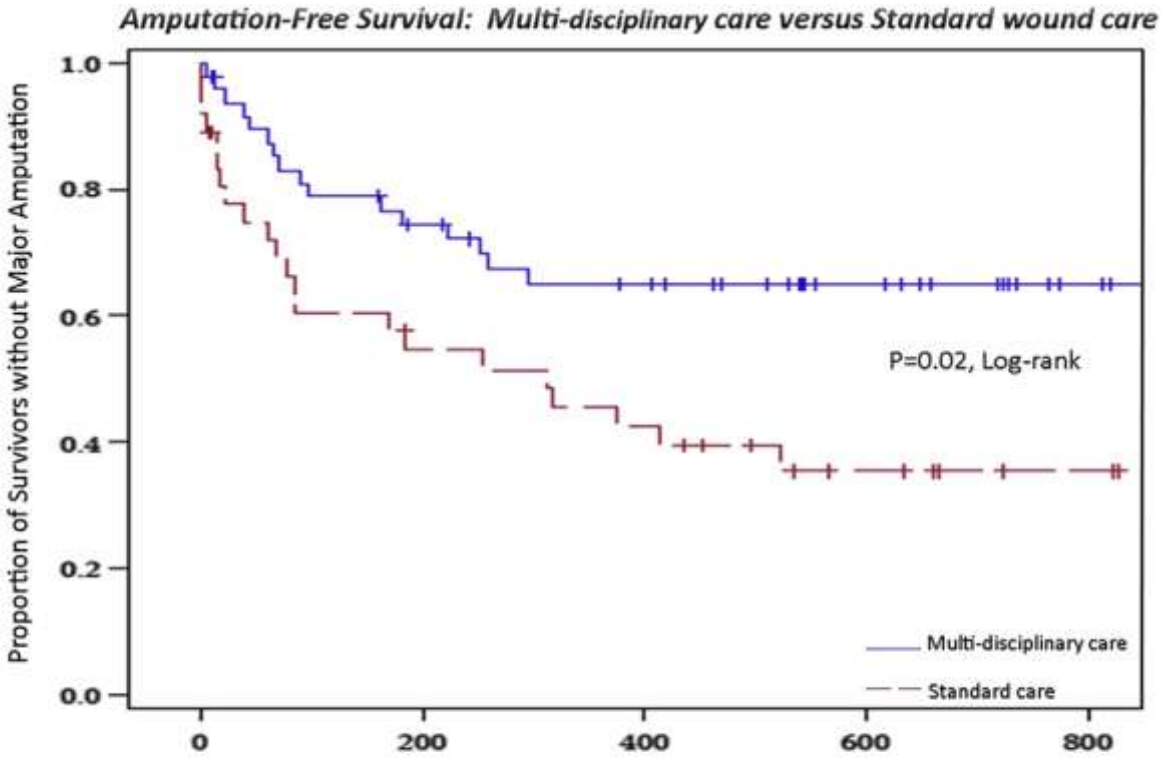
Conclusion: Advanced age and comorbidities reduce life span but not the chance of avoiding major amputation after below-knee bypass surgery for critical limb ischemia.

Ann Vasc Surg 2011


WANDER
Ovomaltine
Mit Ovomaltine kannst Du's nicht besser.
Aber länger.


ina.fr

La revascularisation seule ne suffit pas



Multi-disciplinary					
N	51	34	26	14	4
N Major amp/death	0	17	8	12	10
% SE	0	6	7	7	7
Standard					
N	34	18	14	7	3
N Major amp/death	0	16	4	7	4
% SE	0	8	8	8	8

Chung et al. JVS 2015

Take home message

- **L’examen clinique ou les outils diagnostics simples n’ont d’utilité que normaux**
- **Le recours aux angiologues doit précéder l’exécution d’imagerie radiologique**
- **La population artéritique mérite une prise en charge médicale agressive souvent multimodale**
- **Toute plaie chronique mérite une évaluation vasculaire.**