CONGRESSO AMD-SID Lazio 2016

Notizie
dalla regione:
ricerca, assistenza e
politiche sanitarie

Roma
23-24 settembre 2016
Villa Malta

SID
Società Italiana
di Diabetologia

AMD
1974
ANNO DI FONDAZIONE
ASSOCIAZIO
MEDICI
DIABETOLO

Vasculopatia periferica ne pazienti diabetici in dialis

Dott. Marco Meloni

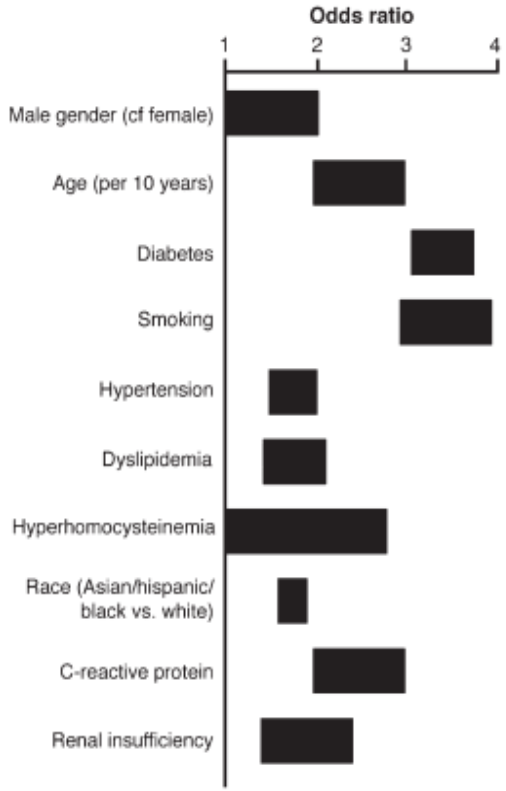
Università degli Studi di Roma

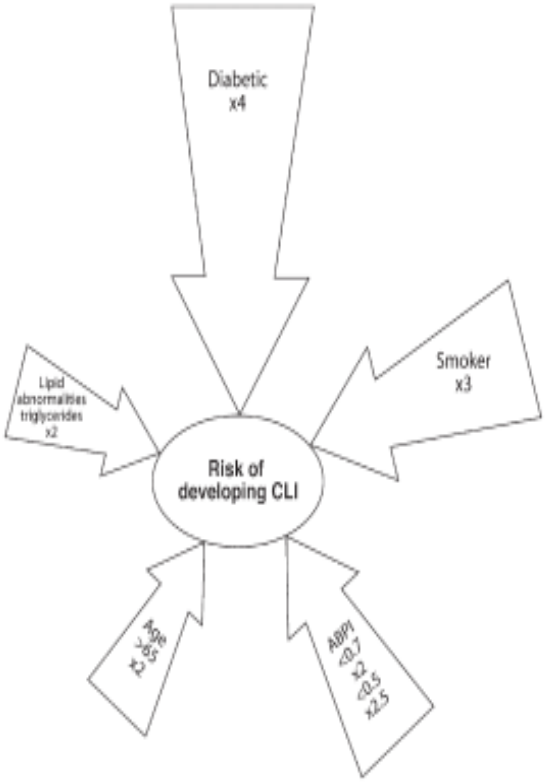
Tor Vergata

Peripheral arterial disease (PAD)

Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II)

L. Norgren,[a] W.R. Hiatt,[b] J.A. Dormandy, M.R. Nehler, K.A. Harris, and F.G.R. Fowkes on behalf of the TASC II Working Group, *Örebro, Sweden and Denver, Colorado*





Epidemiology

3-30% prevalence among diabetic patients

Jude EB et al. Peripheral arterial disease in diabetes

Diabe

22% in newly diagnosed diabetes type 2

Mingardi R et al. SCAR (SCreening for ARteriopathy) S

Screening for peripheral arterial disease by means of the ankle-brachial index in newly diagnosed type 2 diabe

Diabe

50% in diabetes with foot ulcers

Prompers L et al Prediction of outcome in individuals with diabetic foot ulcers: focus on the differences between

with and without peripheral arterial disease. EURODIALE Study Diabeto

Rarely symptomatic because of the frequent concomitance of sensitive motor neuropat

Aiello et al. Treatment of peripheral arterial disease in

A consensus of the Italian Societies of Diabetes (SID, AMD), Radiology (SIRM) and Vascular Endovascular Surge

- *Elsi*

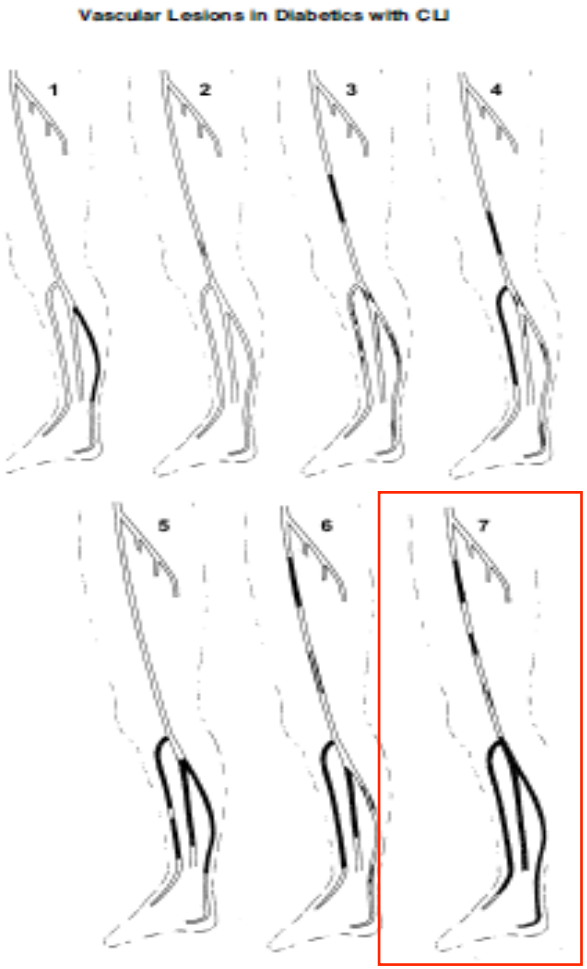
Epidemiology

Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II)

L. Norgren,[a] W.R. Hiatt,[b] J.A. Dormandy, M.R. Nehler, K.A. Harris, and F.G.R. Fowkes on behalf of the TASC II Working Group, *Örebro, Sweden and Denver, Colorado*

	Increased risk VS general population (%)	
Original event	**Myocardial infarction**	**Stroke**
Myocardial infarction	**5–7 x greater risk** (includes death)	**3–4 x greater risk** (includes TIA)
Stroke	**2–3 x greater risk** (includes angina and sudden death)	**9 x greater risk**
Peripheral arterial disease	**4 x greater risk** (includes fatal MI and other CHD death)	**2–3 x greater risk** (includes TIA)

Characteristic of PAD



Vascular Involvement in Diabetic Subjects with Ischemic Foot Ulcer: A New Morphologic Categorization of Disease Severity

L. Graziani,[1*] A. Silvestro,[1] V. Bertone,[2] E. Manara,[3] R. Andreini,[4] A. Sigala,[5] R. Mingardi[6] and R. De Giglio[7]

- Rapid progression
- Distal and bilateral
- Vascular calcification
- Reduced neoangiogenesis
- Poor collateral vessels

Characteristics of PAD

Peripheral Arterial Disease in Diabetic and Nondiabetic Patients

A comparison of severity and outcome

EDWARD B. JUDE MD, MRCP
SAMSON O. OYIBO, MRCP
NICHOLAS CHALMERS, FRCR
ANDREW J.M. BOULTON, MD, FRCP

extremity amputation in diabetic patients with chronic foot ulcers (9).

Few studies have compared the sever-

Table 1—*Demographics, smoking history, follow-up duration, and indications for arteriography in diabetic and nondiabetic patients*

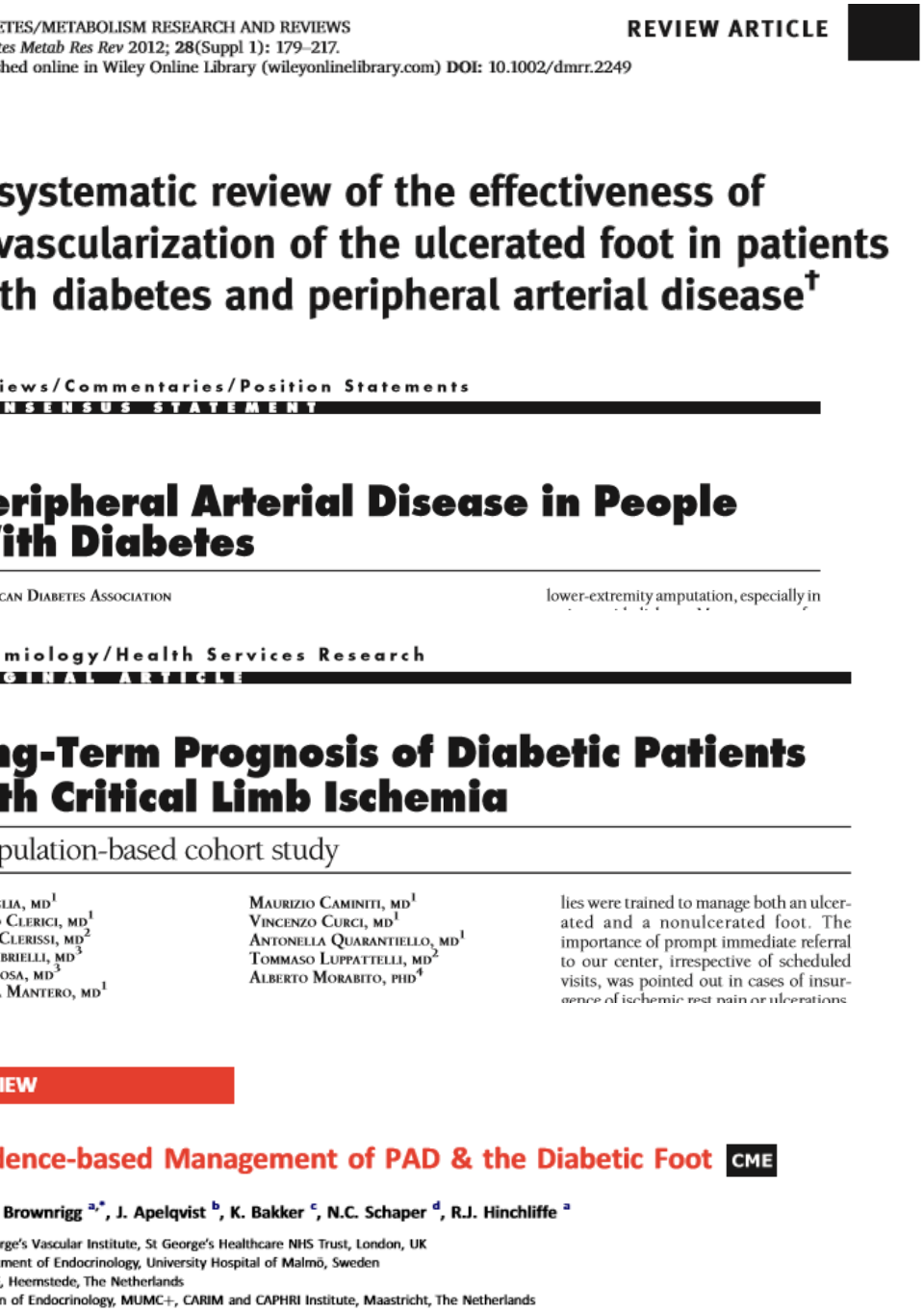
	Diabetic patients	Nondiabetic patients	*P* value
n	58	78	
Age (years)	63.83 ± 10.4	65.31 ± 11.11	0.43
Men (%)	34 (59.7)	47 (61.8)	0.42
Smokers* (%)	47 (81.0)	60 (76.9)	0.26
Duration of follow-up (years)	4.47 ± 1.25	4.52 ± 1.23	0.85
Indications for arteriography			
Intermittent claudication	50 (86.2)	64 (82.1)	0.25
Rest pain	2 (3.5)	9 (11.5)	0.04
Foot ulcer	24 (41.4)	7 (8.9)	<0.0001
Foot gangrene	7 (12.1)	2 (2.6)	0.01
Number of amputations	24 (41.4)	9 (11.5)	<0.0001
High level	18	9	
Low level	6	0	

Data are *n* (%) or means ± SD. *This includes current smokers and ex-smokers.

Table 2—*Differences in median arterial occlusion score between diabetic and nondiabetic patients*

	Median interquartile range additive occlusion score		
Arterial segment†	Diabetic patients	Nondiabetic patients	*P* value
Aorta	3 (3–4)	3 (3–3.5)	0.50
Common iliac	3 (2–3)	3 (2–3)	0.76
External iliac	2 (0–3)	3 (2–3)	0.15
Internal iliac	3 (0–6)	3 (0–4)	0.51
Profunda femoris	3 (0–5)	0 (0–2)	0.02
Superficial femoral	8 (4–13)	7 (2–9)	0.10
Popliteal	7 (3–10)	3 (0–4)	0.02
Anterior tibial	13 (4–15)	3 (0–13)	0.002
Peroneal	5 (0–15)	0 (0–6)	0.001
Posterior tibial	15 (0–15)	4 (0–14)	0.001

Data are *n* (interquartile range). *Because arterial segment disease was bilaterally similar, only one side (left) is used for analysis.



ETES/METABOLISM RESEARCH AND REVIEWS
es Metab Res Rev 2012; 28(Suppl 1): 179–217.
hed online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/dmrr.2249

REVIEW ARTICLE

systematic review of the effectiveness of
vascularization of the ulcerated foot in patients
th diabetes and peripheral arterial disease†

iews/Commentaries/Position Statements
NSENSUS STATEMENT

eripheral Arterial Disease in People
ith Diabetes

CAN DIABETES ASSOCIATION

lower-extremity amputation, especially in

miology/Health Services Research
GINAL ARTICLE

ng-Term Prognosis of Diabetic Patients
th Critical Limb Ischemia

pulation-based cohort study

LIA, MD[1]
CLERICI, MD[1]
CLERISSI, MD[2]
BRIELLI, MD[3]
OSA, MD[3]
MANTERO, MD[1]

MAURIZIO CAMINITI, MD[1]
VINCENZO CURCI, MD[1]
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TOMMASO LUPPATTELLI, MD[2]
ALBERTO MORABITO, PHD[4]

lies were trained to manage both an ulcer-
ated and a nonulcerated foot. The
importance of prompt immediate referral
to our center, irrespective of scheduled
visits, was pointed out in cases of insur-
gence of ischemic rest pain or ulcerations

IEW

lence-based Management of PAD & the Diabetic Foot CME

Brownrigg [a,*], J. Apelqvist [b], K. Bakker [c], N.C. Schaper [d], R.J. Hinchliffe [a]

rge's Vascular Institute, St George's Healthcare NHS Trust, London, UK
ment of Endocrinology, University Hospital of Malmö, Sweden
, Heemstede, The Netherlands
n of Endocrinology, MUMC+, CARIM and CAPHRI Institute, Maastricht, The Netherlands

Treatment of PAD: revascularization

- By-pass and PTA are two options to treat PAD
- PTA is a safety procedure in diabetic patients with critical limb ischemia
- PTA can be performed in patients with many comorbidities
- High rate of limb salvage (70-80% a 1 year)

Epidemiology

Diabetes and renal disease are independent risk factors for peripheral arterial disease

Norgren L. et al TASC II Working Group, Endovascular Surgery 20

The prevalence of PAD among patients with end stage renal disease (ESRD has been reported in up to 77%

Scheiffer T. et al J Diabetes Compl 19

ESRD is a strong risk factor for both ulceration and amputation in diabetic patients

Luksha N. et Al, Clinical Science 20

mpact of Renal Insufficiency on Mortality in Advanced ower Extremity Peripheral Arterial Disease

Ann M. O'Hare,*¶ Daniel Bertenthal,‡ Michael G. Shlipak,†¶ Saunak Sen,‖ Mary-Margaret Chren§

*Divisions of Nephrology and †General Internal Medicine, Department of Medicine, ‡Health Services Research Enhancement Award Program, and §Department of Dermatology, VA Medical Center San Francisco; and ‖Department of Epidemiology and Biostatistics; and ¶Department of Medicine, University of California, San Francisco, San Francisco, California

e 1. Characteristics of cohort patients by level of renal function

Characteristic	GFR ≥60 (n = 3561)	GFR 30–60 (n = 1742)	GFR <30 (n = 484)
(±SD)	67 ± 11	73 ± 9[a]	71 ± 10[a]
k (%)	22%	18%[a]	23%
betes (%)	53%	68%[a]	74%[a]
dian serum glucose (25th–75th percentile range)	120 (97–174)	131 (100–195)[a]	135 (100–199)[a]
pertension (%)	76%	89%[a]	90%[a]
onary artery disease (%)	48%	62%[a]	65%[a]
gestive heart failure (%)	22%	41%[a]	48%[a]
ebrovascular disease (%)	24%	29%[a]	27%
onic obstructive pulmonary disease (%)	35%	38%	33%

≤ 0.001. Comparisons are with GFR ≥60 ml/min per 1.73 m².

n Soc Nephrol 16: 514-519, 2005. doi: 10.1681/ASN.2004050409

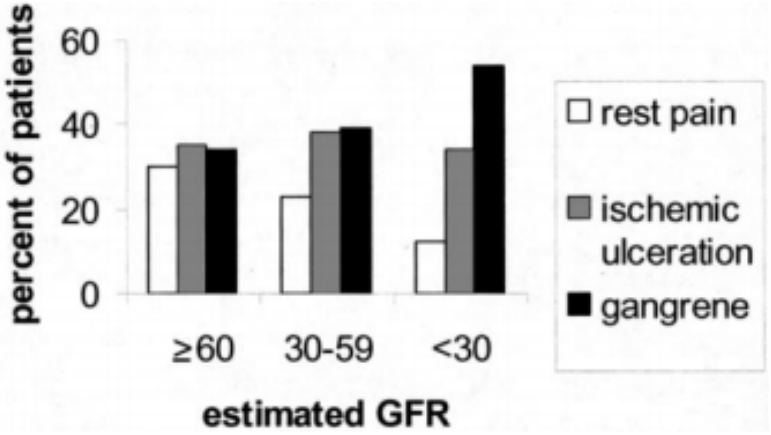


Figure 1. Clinical presentation of critical limb ischemia by level of renal function.

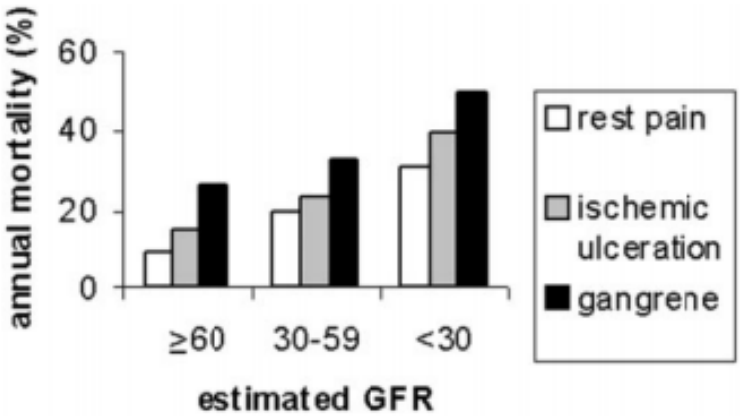
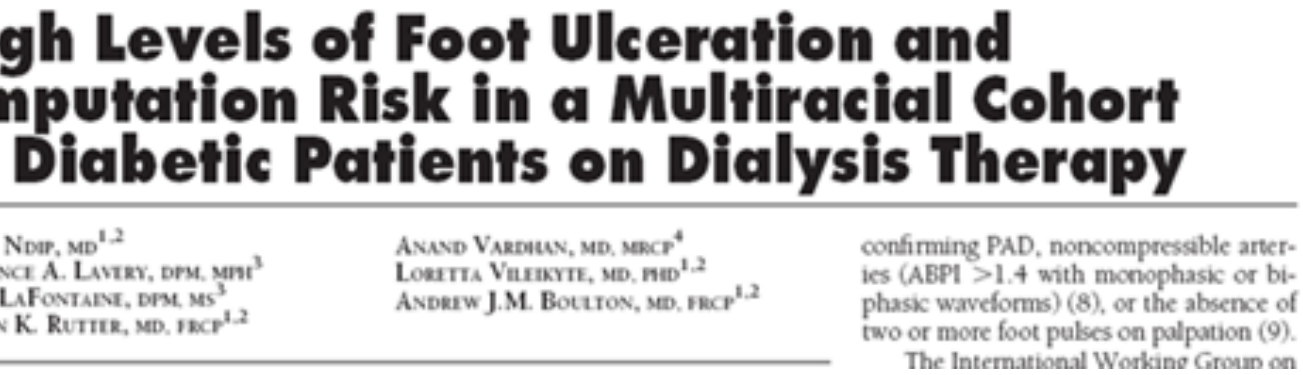


Figure 2. Percent annual mortality by level of renal function and clinical presentation.



gh Levels of Foot Ulceration and
mputation Risk in a Multiracial Cohort
Diabetic Patients on Dialysis Therapy

NDIP, MD[1,2]
NCE A. LAVERY, DPM, MPH[3]
LAFONTAINE, DPM, MS[3]
K. RUTTER, MD, FRCP[1,2]
ANAND VARDHAN, MD, MRCP[4]
LORETTA VILEIKYTE, MD, PHD[1,2]
ANDREW J.M. BOULTON, MD, FRCP[1,2]

confirming PAD, noncompressible arteries (ABPI >1.4 with monophasic or biphasic waveforms) (8), or the absence of two or more foot pulses on palpation (9).
The International Working Group on

or amputation was related to previous ulcer, peripheral arterial disease and haemodialysis…»

alysis Treatment Is an Independent Risk
ctor for Foot Ulceration in Patients With
abetes and Stage 4 or 5 Chronic Kidney
sease

DIP, MD[1,2]
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VILEIKYTE, MD, PHD[1,2]
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HAI ASARI, MD, MRCP[3]
MEHREEN JAMEEL, MBCHB[4]
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LAWRENCE A. LAVERY, DPM, MPH[5]
ANDREW J.M. BOULTON, MD, FRCP[1,2]

have shown that incident foot ulceration increases with progressive renal impairment (5), and one study reported a close temporal relation among the onset of dialysis, foot ulceration, and amputations

Dialysis treatment was independentment associated with foot ulceration. Guidelines should
ghlights dialysis as an important risk factor for foot ulceration requiring intensive foot care.»

J Am Soc Nephrol 13: 497–503, 2002

heral Vascular Disease Risk Factors among Patients ergoing Hemodialysis

ANN M. O'HARE,* CHI-YUAN HSU,* PETER BACCHETTI,† and KIRSTEN L. JOHANSEN*†‡

*Division of Nephrology, Department of Medicine, and †Department of Epidemiology and Biostatistics, University of California, San Francisco, San Francisco, California, and ‡Department of Veterans Affairs Medical Center, San Francisco, California.

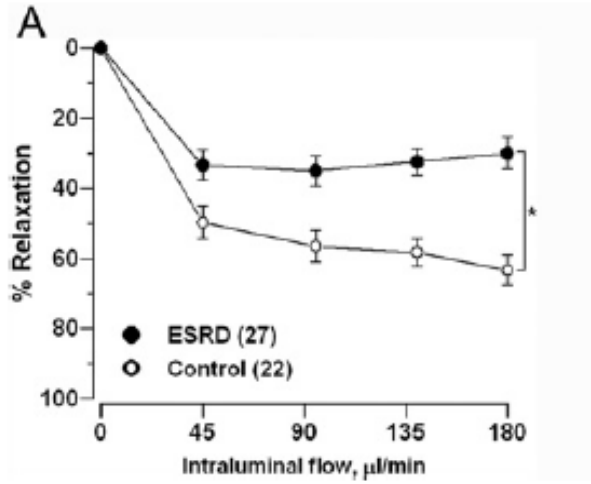
The association of PVD and vintage has not been previou reported. This might suggest an association with some fa associated either with the dialysis process or with ESRD it Such processes could include vascular calcification, oxida stress, chronic inflammation, or exposure to atherogenic tors associated with dialysis or uremia.

Variable	OR	95% CI	*P* Value
Age (per 10-yr increase)	1.15	1.10 to 1.20	<0.001
White race (*versus* non-white race)	1.27	1.14 to 1.42	<0.001
Male gender	1.26	1.13 to 1.41	<0.001
Diabetes mellitus	4.18	3.75 to 4.67	<0.001
Coronary artery disease	2.85	2.55 to 3.19	<0.001
Cerebrovascular disease	1.81	1.58 to 2.06	<0.001
Smoking (ever *versus* never)	1.27	1.13 to 1.42	<0.001
Diastolic BP (per 10-mmHg increase)	0.91	0.87 to 0.96	<0.001
LVH by EKG	1.14	1.01 to 1.29	0.037
Malnourished	1.47	1.23 to 1.74	<0.001
Albumin level (per 1-g/dl increase)	0.67	0.58 to 0.77	<0.001
PTH level (per doubling of serum level)	0.96	0.93 to 0.99	0.016
Vintage (per doubling of vintage)	1.13	1.10 to 1.17	<0.001
Kt/V	0.75	0.57 to 0.99	0.034

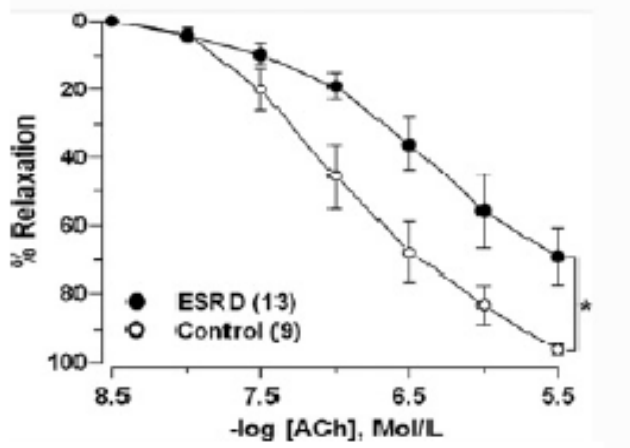
Variable	OR	95% CI	*P* Value
Age (per 10-yr increase)	1.15	1.08 to 1.22	<0.001
White race (*versus* non-white race)	1.21	1.03 to 1.43	0.021
Male gender[b]	1.60	1.36 to 1.89	<0.001
Diabetes mellitus	4.81	4.08 to 5.67	<0.001
Coronary artery disease	2.41	2.05 to 2.84	<0.001
Cerebrovascular disease	1.86	1.53 to 2.25	<0.001
Smoking (ever *versus* never)[b]	1.55	1.31 to 1.83	<0.001
Diastolic BP (per 10-mmHg increase)	0.92	0.86 to 0.98	0.008
LVH by EKG	1.36	1.15 to 1.61	<0.001
Malnourished	1.44	1.13 to 1.85	0.004
Albumin level (per 1-g/dl increase)	0.69	0.56 to 0.86	0.001
PTH level (per doubling of PTH level)	0.96	0.92 to 1.00	0.068
Vintage (per doubling of vintage)	1.11	1.05 to 1.17	<0.001
Kt/V	1.16	0.79 to 1.72	0.447

Impaired resistance artery function in patients with end-stage renal disease

Flow mediated dilatation is attenued in ESRD patients



Dilatation in response to acetylcholine was reduced



Luksha N. et Al, Clinical Science 2011

Clinical Study

Implications of Foot Ulceration in Hemodialysis Patients: A 5-Year Observational Study

Hassan Al-Thani,[1] Ayman El-Menyar,[2,3,4] Valsa Koshy,[1] Ahmed Hussein,[1] Ahmed Sharaf,[1] Mohammad Asim,[2] and Ahmed Sadek[1]

Hindawi Publishing Corporation
Journal of Diabetes Research
Volume 2014, Article ID 945075, 6 pages
http://dx.doi.org/10.1155/2014/945075

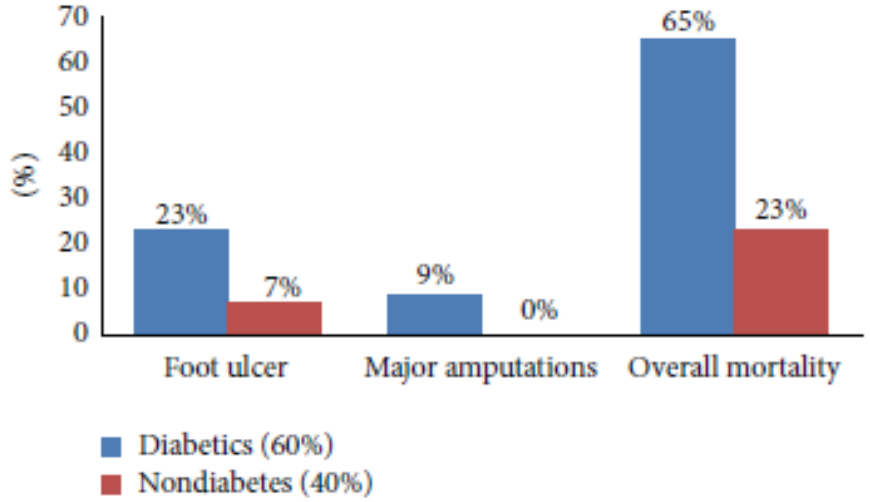


FIGURE 2: Outcomes in HD patients based on the presence of DM ($P = 0.001$ for all).

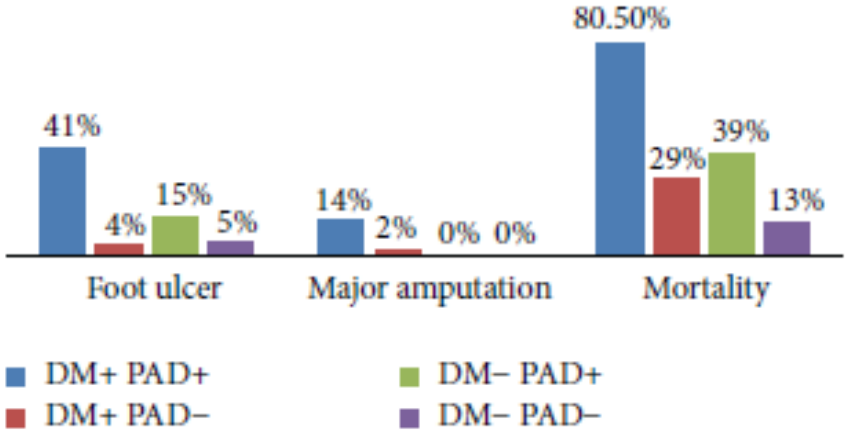


FIGURE 3: Outcomes in HD patients based on the presence/absence of DM and/or PAD ($P = 0.001$ for all).

Nutrition, Metabolism & Cardiovascular Diseases (2014) 24, 355–369

Available online at www.sciencedirect.com

Nutrition, Metabolism & Cardiovascular Diseases

journal homepage: www.elsevier.com/locate/nmcd

Aiello et al, 201

SPECIAL ARTICLE

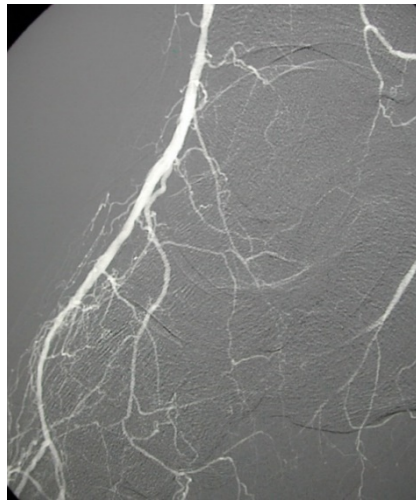
Treatment of peripheral arterial disease in diabetes: A consensus of the Italian Societies of Diabetes (SID, AMD), Radiology (SIRM) and Vascular Endovascular Surgery (SICVE)

lysis patients have more vessels calcification that can hamper the endovascular atment with a technical poor success

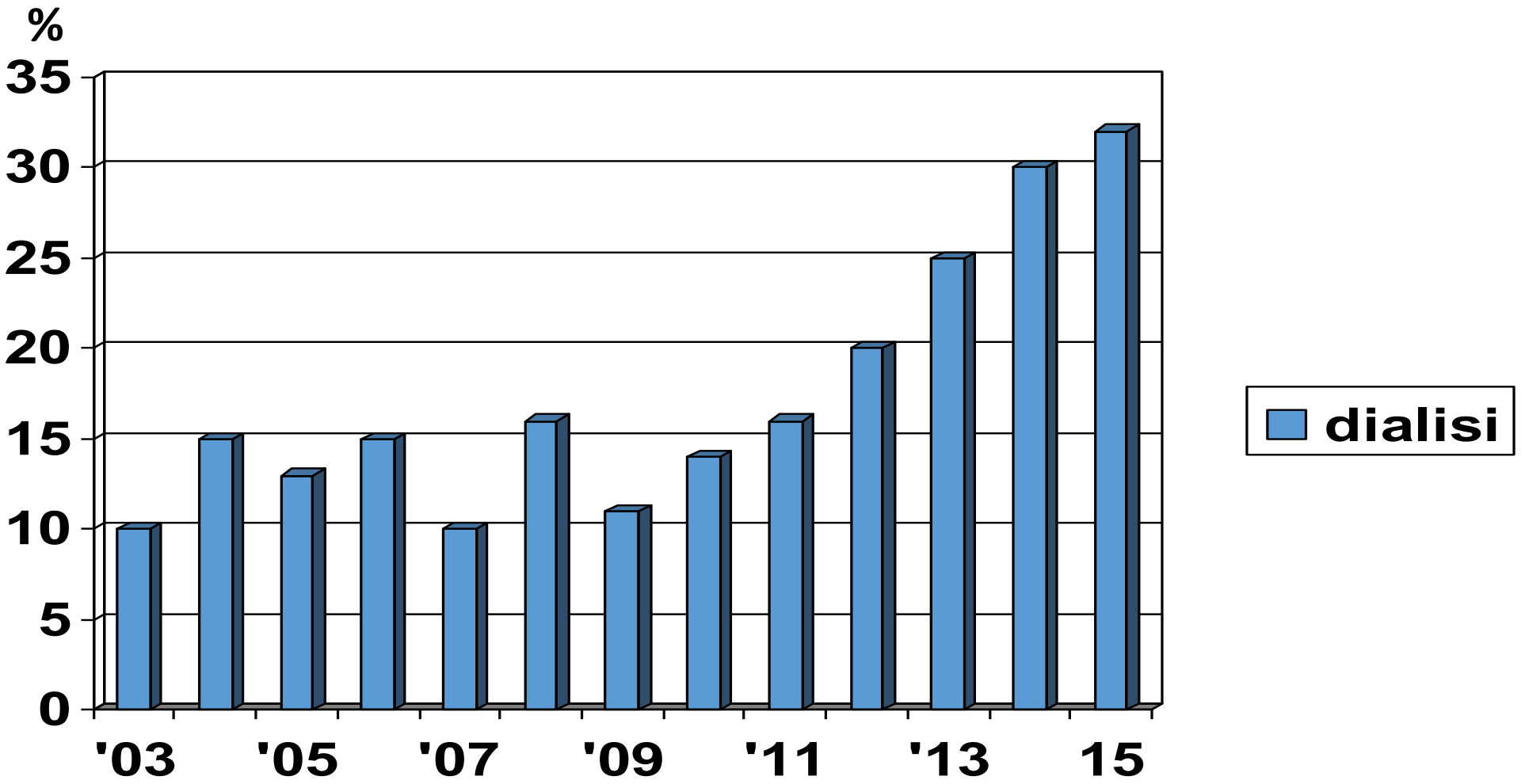
patient on dialysis treatment the arterial disease is more distal and also collateral sels can be involved

ween 22% and 44% of dialyzed patients undergo primary amputations because of hemic lesions. High short-term mortality rate (3-17%) and low long-term survival e (45%) can negatively influence the decision to undertake revascularization

A is feasible and effective in dialysis patients with PAD, and should be preferred to er more invasive intervention



ncidence of dialysis among diabetic patients with diabetic foo cer



Data 2003-2015, Policlinico Tor Vergata Roma

Open Journal of Endocrine and Metabolic Diseases, 2013, 3, 208-212
http://dx.doi.org/10.4236/ojemd.2013.33028 Published Online July 2013 (http://www.scirp.org/journal/ojemd)

Scientific Research

Percutaneous Angioplasty in Diabetic Patients with Critical Limb Ischemia and Chronic Kidney Disease

Table 1. Baseline clinical characteristic of 456 patients according to chronic kidney disease stage.

KD classes	Class 1 n = 40	Class 2 n = 164	Class 3 n = 154	Class 4 n = 38	Class 5 n = 60	P value (X ANOVA)
ge (mean)	62.9	66.9	70.4	71.5	71.9	<0.001
x (% male)	67	70	51	53	71	ns
pe 2 diabetes (%)	91.5	96.9	94.1	91.2	86.6	<0.001
abetes duration (years)	20.9	19.4	20.4	20.5	19.8	ns
ood glucose (mg/dl)	159.8	146.9	151.1	145.8	139.8	ns
C (%)	7.98	8.08	7.39	9.77	7.17	ns
BP (mmHg))	80.5	82	79.6	78.6	77	<0.001
SP (mmHg)	138.7	135	134.9	135	134	ns
tal cholesterol (mg/dl)	155.7	159.8	173.8	167.7	146.5	ns
DL (mg/dl)	36.1	38.2	42.6	43.6	41.4	ns
glycerides (mg/dl)	126.5	135.5	140	137	163	ns
DL (mg/dl)	95.7	96.4	106.1	92.7	81.5	<0.001
cer dimension > 5 cm	57.58	53.06	59.71	62.4	57.04	ns
fection yes (%)	81.2	75.2	72	70	75	ns
VC D3 (%)	85.7	78.9	78.63	76.19	77.5	ns

, diastolic blood pressure; SBP, systolic blood pressure; TWC, Texas wound classification.

60% Limb Salvage

18% amputation

22% death

..in conlusione,our data suggest that ESRD can influence the outcomes in terms of limb salvage, major amputation and death..

Contents available at ScienceDirect

Diabetes Research and Clinical Practice

journal homepage: www.elsevier.com/locate/diabres

International Diabetes Federation

g term outcomes of diabetic haemodialysis ents with critical limb ischemia and foot ulcer ☆

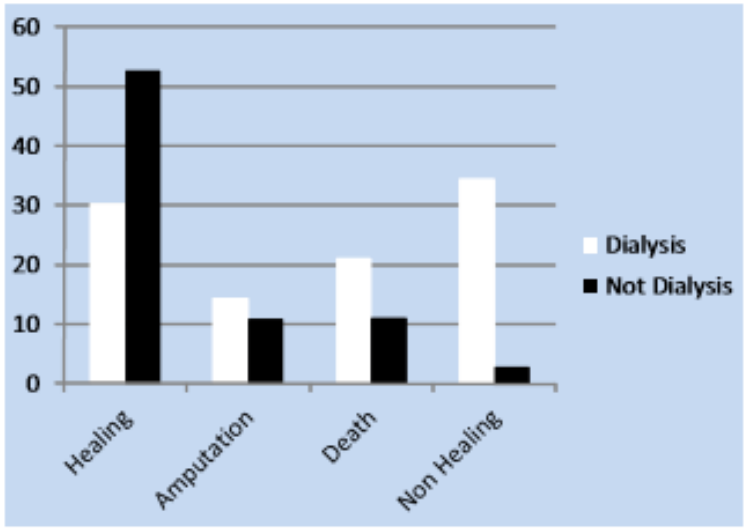


Fig. 1 – Outcomes in dialysis group and not dialysis group. $X^2 = 0.0004$.

e 2 – Multivariate analysis in not dialysis group. TcPO2: Transcutaneous Partial Pressure of Oxygen; PTA: percutaneous sluminal angioplasty; HDL: high density lipoproteins.

	Healing	*p* value	Amputation	*p* value	Death	*p* value
hemic heart disease	0.39 (0.23–0.85)	0.0015				
cPO2	0.015 (0.0049–0.027)	0.0054				
A successful			0.39 (0.25–0.96)	<0.0001		
L values					0.08 (0.038–0.14)	0.0014
otid artery disease					1.07 (1.02–2–1)	0.0386

e 3 – Multivariate analysis in dialysis group. Any significant variable was found for healing, non healing and death at the ivariate analysis.

	Amputation	*p* value
ed blood pressure control (systolic > 130 mmHg, diastolic > 80)	2.02 (1.8–3.7)	0.0146

Dialysis increases the risk of Non Healin Major Amputation and Death. Specif factors related to adverse outcomes we not identifed and dialyzed patients shou be considered highest risk subjects.

Meloni M. et al, 2016

Contents available at ScienceDirect

Diabetes Research and Clinical Practice

journal homepage: www.elsevier.com/locate/diabres

International Diabetes Federation

term outcomes of diabetic haemodialysis nts with critical limb ischemia and foot ulcer ☆

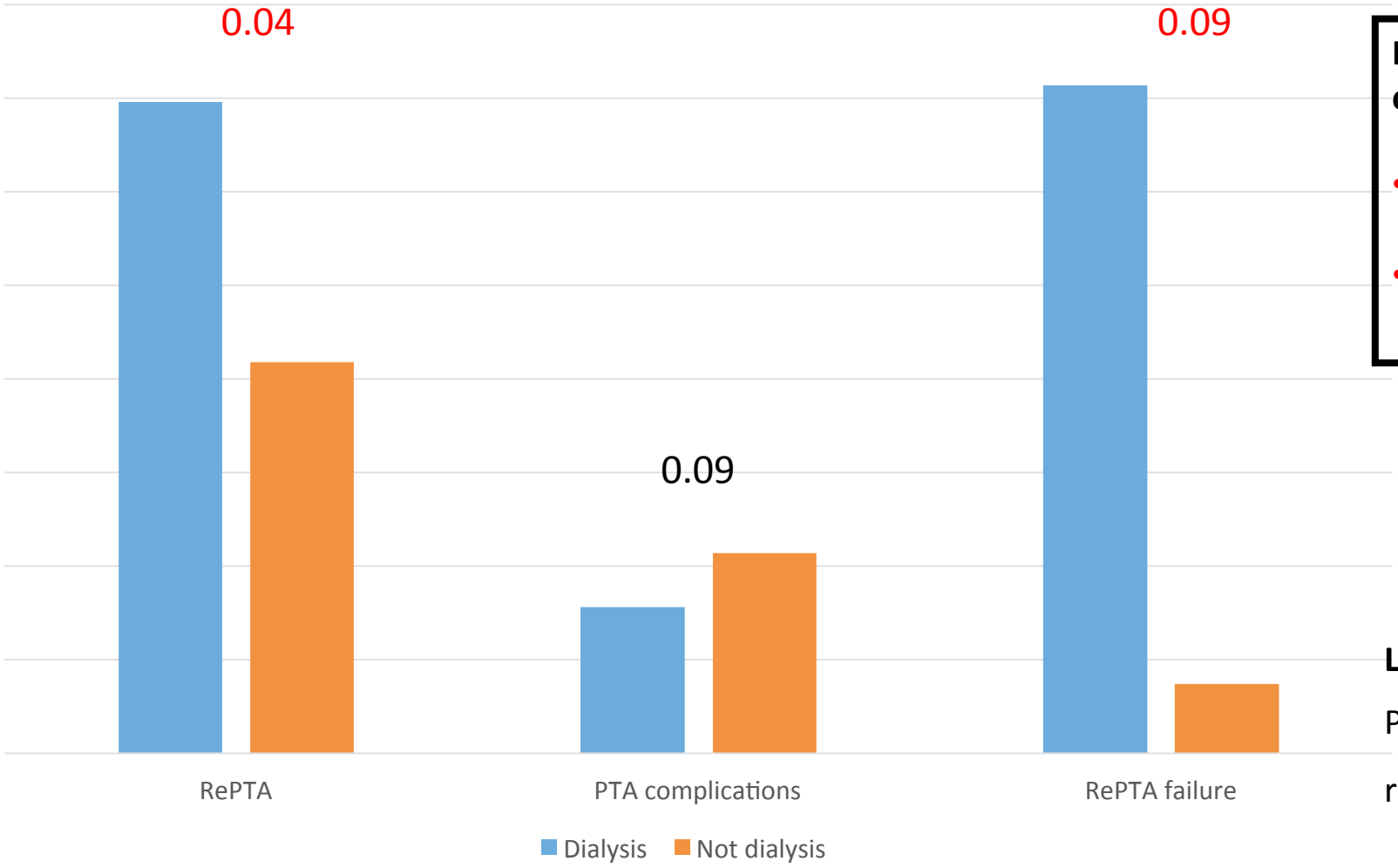
line characteristics of general population, dialysis group and not dialysis group. HbA1C: glycated hemoglobin; sity lipoprotein; LDL: low density lipoprotein; TWC: Texas Wound Classification; TcPO2: Transcutaneous e of Oxygen.

	Total	Dialysis group	Not dialysis group	p value
	599	99 (16.5%)	500 (83.5%)	
	70.02 ± 9.91	66.8 ± 9.4	70.6 ± 9.9	0.0012
	62%	62.6%	62.1%	0.92
es (%)	95%	90.6%	95.3%	0.27
ation (years)	20.42 ± 12.92	20.7 ± 1.3	20.3 ± 0.5	0.78
y disease (%)	24%	25.3%	23.7%	0.75
rt disease (%)	44%	57.8%	41.5%	0.0061
mmol/mol)	(7.8 ± 0.2%), (62 ± 2)	(7.3 ± 2%), (56 ± 15)	(7.9 ± 5.5%), (63 ± 43)	0.36
(%)	61%	57.5%	61.3%	0.64
d pressure (mmHg)	135 ± 15	133.7 ± 17	135 ± 15	0.42
od pressure (mmHg)	80 ± 2	77 ± 9	80 ± 9	0.0103
	65%	72.1%	63.8%	0.281
erol (mg/dl)	166 ± 39	144 ± 43	163 ± 45	0.0028
	43 ± 13	38 ± 13	43 ± 13	0.004
(mg/dl)	148 ± 88	171 ± 88	135 ± 63	<0.0001
	96 ± 32	79 ± 4	98 ± 2	0.0002
%)	29%	44.9%	26.6%	0.0115
xers (%)	23.5%	21%	24.1%	0.53
cm^2)	48%	54.7%	46%	0.14
(%)	76%	75.9%	75.8%	0.83
%)	19%	38.8%	13.6%	0.0003
(%)	74%	74%	73.9%	0.96
3 (%)	67%	75.6%	64.4%	0.30
(mmHg)	16.9 ± 15.6	18.05 ± 15.3	16.7 ± 15.7	0.51
O2 (mmHg)	33.8 ± 19.4	29.6 ± 1 ± 2.73	44.43 ± 1.01	0.099
Hg)	26.5 ± 6.6	19.77 ± 24.54	27.49 ± 23.46	0.040
ction (n)	2.6 ± 0.13	2.8 ± 0.16	2.6 ± 0.04	0.02
	18%	11.11%	19.63%	0.11
es (%)	17%	15.28%	17.91%	0.73
l failure (%)	12%	7.81%	10.71%	0.09
%)	23%	34.78%	20.92%	0.046
)	53%	47.44%	53.56%	0.31
ical failure (%)	10%	35.71%	3.7%	0.0018

- Dialyzed were younger than not dialyzed
- Approximately 60% had ischemic heart disease
- They had low levels of lipids
- They had more heel ulcers
- They had more vessels affected
- They need more rePTA
- They had more technical failure both at PTA and reP

Meloni M. et al, 2016

Revascularization in dialyzed patients



Indepentent predictor factors clinical recurrenc of limb ischemia

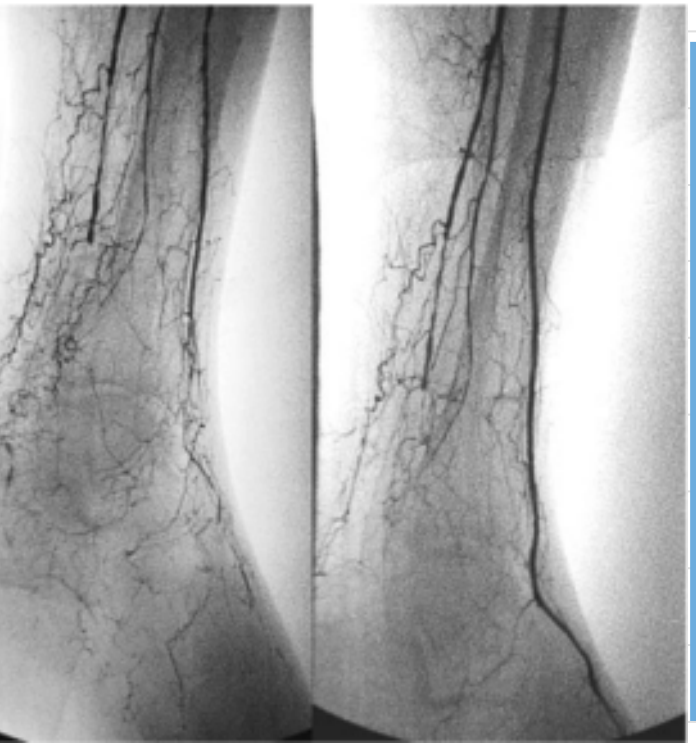
- **Dialysis**
- **Hyperglicemia (untargeted HbA**

Legend:

PTA: percutaneous transluminal angi

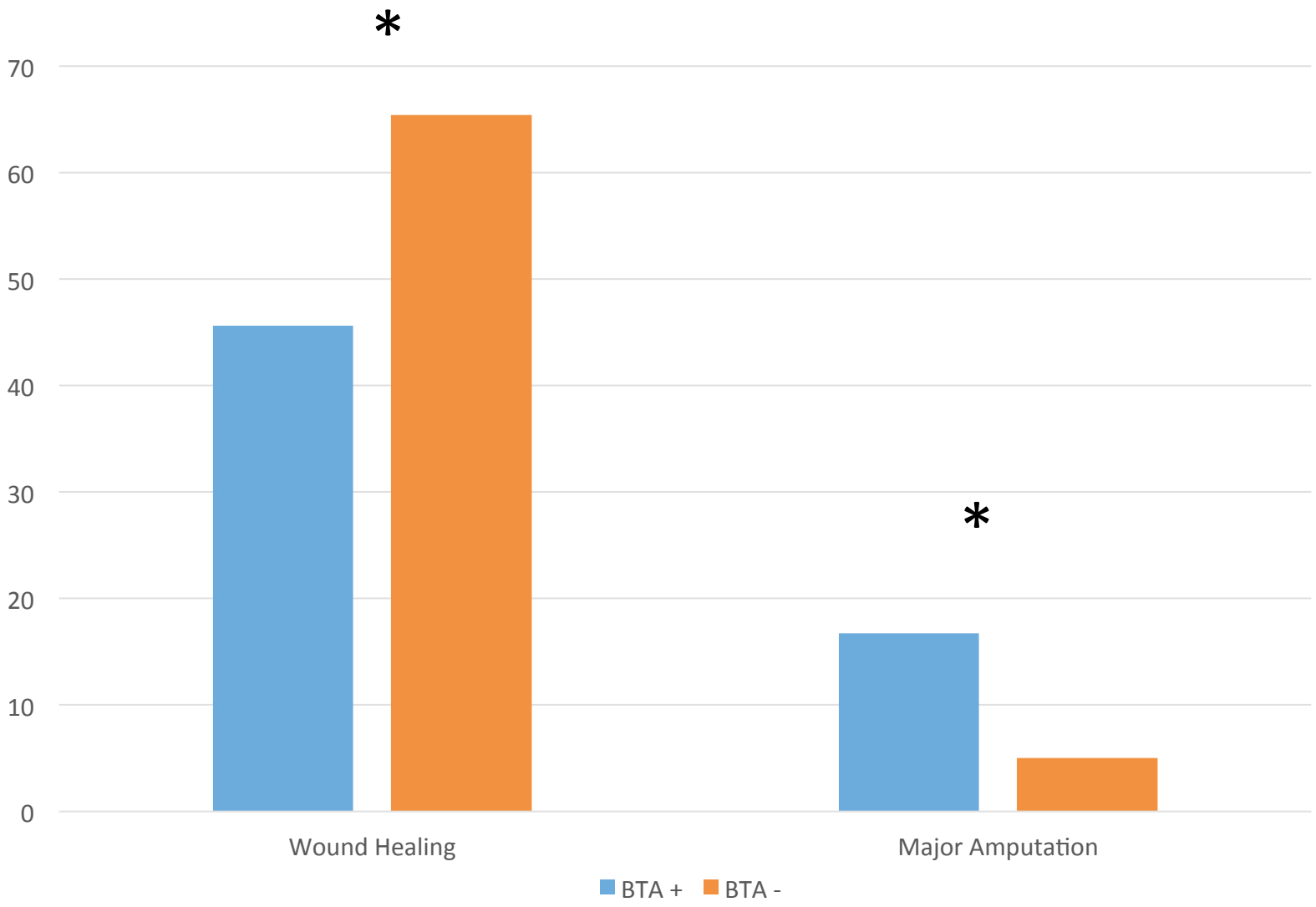
rePTA: new PTA

Peripheral arterial disease in diabetic patients: differences between dialysis and not



Unpublished data

Peripheral arterial disease in diabetic patients: differences between dialysis and not



BTA: below-the-ankle arterial disease

Unpublished dat

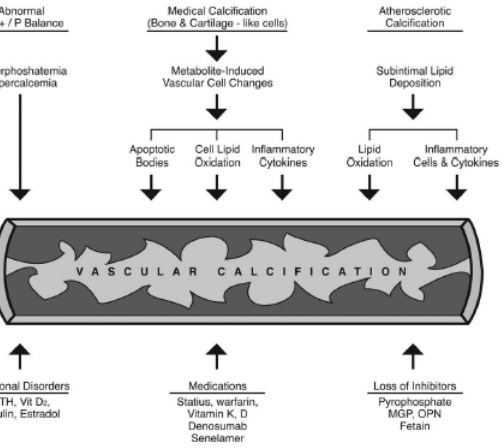
Vascular calcifications and dialysis

- Vascular calcification (VC) is a pathological process occurring in response to an inappropriate environmental milieu . Local and circulating inhibitors of soft-tissue mineralization are down-regulated in CKD patients leading to a phenotype transformation of vascular smooth muscle cells into osteocyte-like cells capable of undergoing the mineralization process.

Moe SM, Chen NX. Mechanisms of vascular calcification in chronic kidney disease. *J Am Soc Nephrol* 2008

Shroff RC, Shanahan CM. The vascular biology of calcification. *Semin Dial* 2007

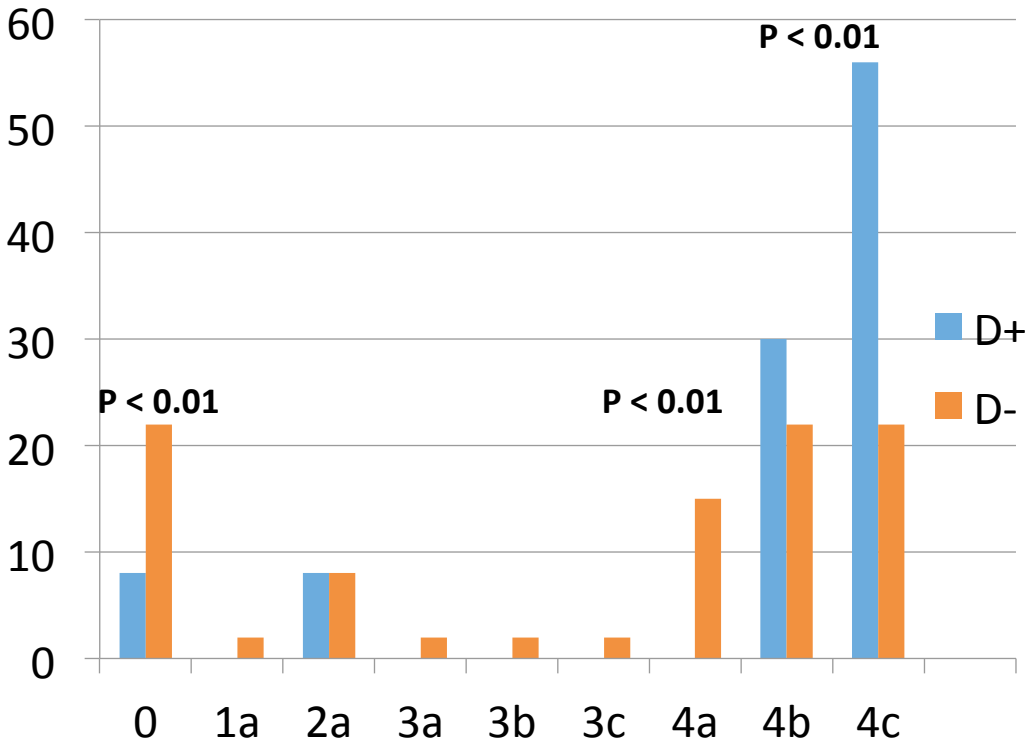
- Numerous risk factors have been reported for VCs. Some of these are 'classic', such as ageing, hypertension, diabetes and dyslipidaemia.



Stomp´or T *et al*. An association between coronary artery calcification score, lipid profile, and selected markers of chronic inflammation in ESRD patients treated with peritoneal dialysis. *Am J Kidney Dis* 2003;

Rufino M, Garcia S, Jimenez A *et al*. Heart valve calcification and calcium × phosphorus product in hemodialysis patients: analysis of optimum values for its prevention. *Kidney Int Suppl* 2003

Vascular calcifications in diabetic patients: differences between dialyzed and not



Proposed Fluoroscopy/DSA based Peripheral Arterial Calcification Scoring System (PACCS): intimal and medial vessel wall calcification at the target lesion site as assessed by high intensity fluoroscopy and digital subtraction angiography (DSA) assessed in AP projection.

Grade 0: No visible calcium at the target lesion site

Grade 1: unilateral calcification < 5 cm; a) intimal calcification; b) medial calcification; c) mixed type

Grade 2: : unilateral calcification ≥ 5 cm; a) intimal calcification; b) medial calcification; c) mixed type

Grade 3: bilateral calcification < 5 cm; a) intimal calcification; b) medial calcification; c) mixed type

Grade 4: bilateral calcification ≥ 5 cm; a) intimal calcification; b) medial calcification; c) mixed type

Vascular calcification above and below the knee

Impact of heart failure and dialysis in the prognosis of diabetic patients with critical limb ischemia and foot ulcer

104 diabetic patients with critical limb ischemia

man (71/104) 68%; woman (33/104) 32%

age 68,5±1,05 years

diabetes duration 21,5±1,2 years

mean HbA1c 64,3±2 mmol/mol

- Revascularization (endovascular approa
- Surgical debridement
- Antibiotic therapy
- Offloading
- Close Follow-up

Meloni M, 2016 Diabetic Foot Study Group Conference

Diabetes, heart failure and dialysis

Group 1 (patients without HF and without D) (HF-, D-) (49/104) (47,1%)
Group 2 (patients with HF and without D) (HF+, D-) (20/104) (19,2%)
Group 3 (patients without HF and with D) (HF-, D+) (20/104) (19,2%)
Group 4 (patients with HF and D) (HF+, D+) (15/104) (14,5%)

leart failure: HF was considered in case of signs, symptoms of HF and
jection fraction less than 35% or preserved ejection fraction (35-50%)
vith relevant structural heart disease (left ventricular hypertrophy,
iastolic impairment)

Dialysis: D was considered in case of chronic renal replacement therapy

Table I Diagnosis of heart failure

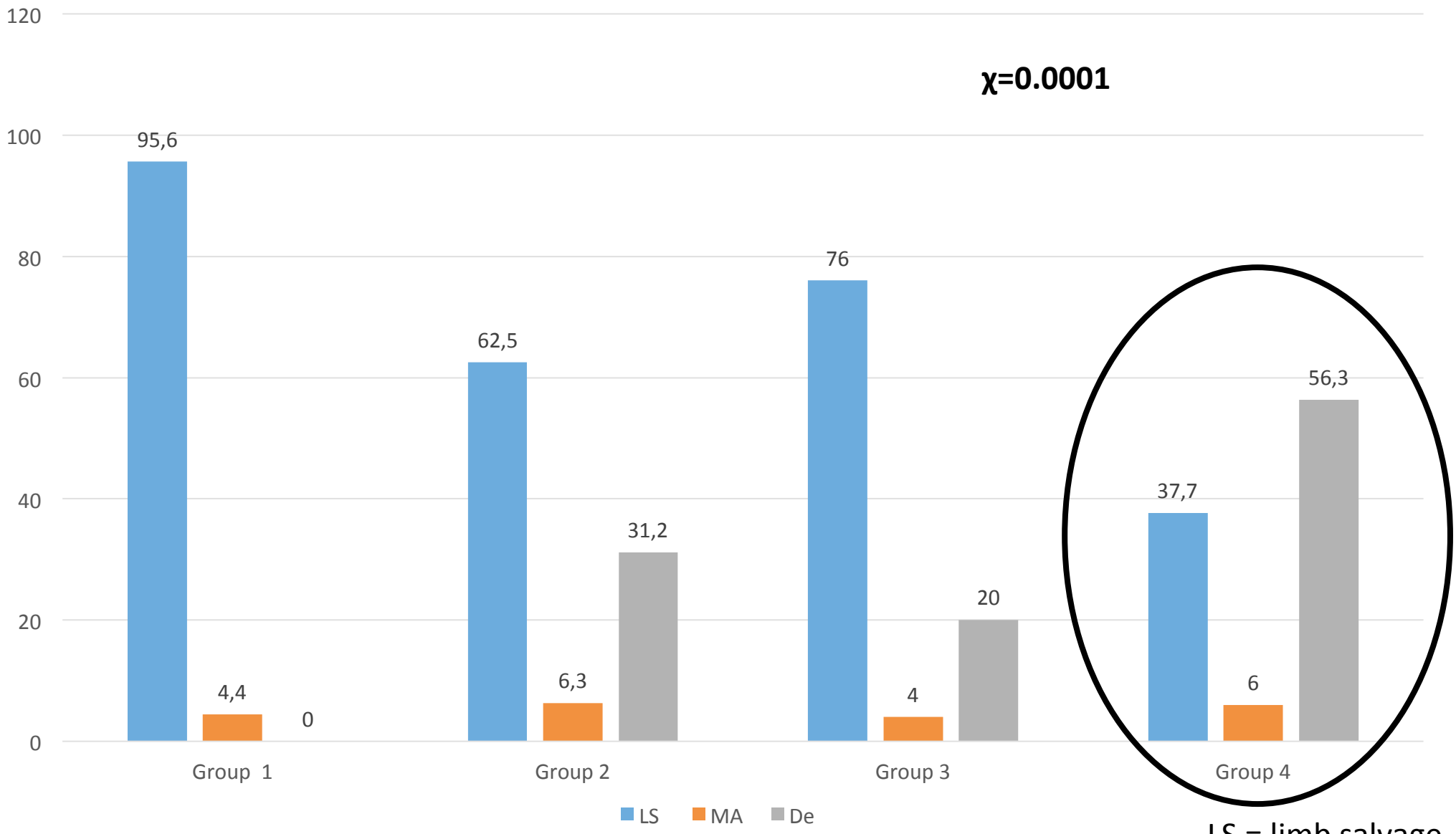
The diagnosis of HF-REF requires three conditions to be satisfied:
1. Symptoms typical of HF
2. Signs typical of HF*
3. Reduced LVEF
The diagnosis of HF-PEF requires four conditions to be satisfied:
1. Symptoms typical of HF
2. Signs typical of HF*
3. Normal or only mildly reduced LVEF and LV not dilated
4. Relevant structural heart disease (LV hypertrophy/LA enlargement) and/or diastolic dysfunction (see Section 4.1.2)

HF = heart failure; HF-PEF = heart failure with 'preserved' ejection fra
HF-REF = heart failure and a reduced ejection fraction; LA = left atrial;
ventricular; LVEF = left ventricular ejection fraction.
*Signs may not be present in the early stages of HF (especially in HF-P
patients treated with diuretics (see Section 3.6).

Results - Baseline characteristics

Variables	Group 1	Group 2	Group 3	Group 4	χ
Age (years)	68,2±1,4	71,9±2,3	66,1±2,1	69,3±2,4	0.3
Sex (male)	70,3%	66,7%	76,9%	78,9%	0.65
Diabetes duration (years)	17,6±1,5	23,9±2,4	22,9±2,2	23,1±2,6	0.06
Hypertension	83%	95%	69%	58%	0.035
Dyslipidemia	80,8%	95,5%	50%	73,7%	0.004
Smoke	21,1%	4,7%	0%	0%	0.0015
Anemia	66,7%	100%	80,8%	93,8%	0.002
Malnutrition	59%	100%	91,7%	100%	0.0001
Inability to stand or walk without help	0%	20%	15,4%	25%	0.002
Ulcers size (>5 cm^2)	63,6%	85%	69,2%	100%	0.003
Foot Infection	55,5%	86,9%	73%	84,2%	0.0125
Procalcitonin	3,9%	25%	23%	62,5%	0.0001
Pro-BNP	716±273	6305±2744	11591±2992	26063±6729	0.0001
PTA complications	5,7%	7,5%	8,2%	5,5%	0.9
Hospital complications	19%	47,3%	23,1%	50%	0.03

Group 1: HF-, D-. Group 2: HF+, D-. Group 3: HF-, D+. Group 4: HF+, D+



LS = limb salvage
MA= major amputation
De= death

LS: limb salvage MA: major amputation De: Death

- Group 1 (HF-. D-): - amputation 4.4%
  - death 0%

Low risk patients

- Group 2 (HF+. D-): - amputation 6.3%
  - death 31.2
- Group 3 (HF-. D+): - amputation 4%
  - death 20%

High risk patients

- Group 4 (HF+. D+): - amputation 6%
  - death 56.3%

Highest risk patients

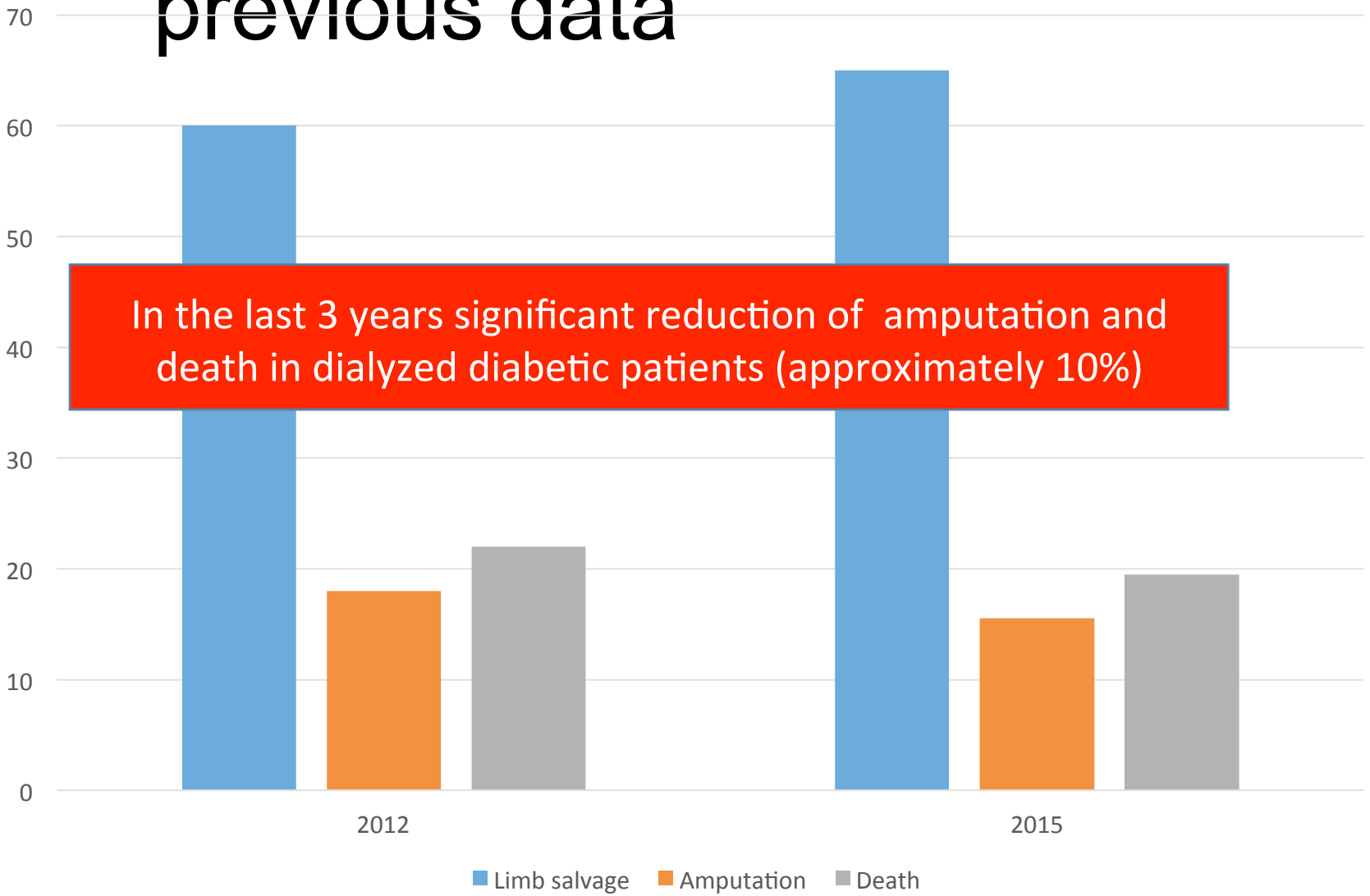
Discussion

- *PAD is a severe complication of diabetes*
- *Dialysis is a strong risk factor for foot ulcer, non-healing ulcer, major amputation and death in diabetic patients with PAD*
- *PAD in dialyzed patients is distal with the involvement of the vessels below the ankle*
- *Below the ankle arterial disease increases the risk of non healing and major amputation*

Discussion

- *Vascular calcification are more severe in dialyzed than in not dialyzed*
- *PTA is feasible and effective in dialysis patients with PAD, and should be preferred t other more invasive interventions*
- *Dialysis increases the risk of restenosis after revascularization*
- *Heart failure and dialysis leads to a highest risk of mortality in diabetic patients wit PAD*

Recent outcomes in diabetic patients on dialysis compared to previous data



In the last 3 years significant reduction of amputation and death in dialyzed diabetic patients (approximately 10%)

2003-2012

60% Limb Salvage

18% amputation

22% death

2003-2015

65% limb salvage

15,5% amputation

19,5% death

CONGRESSO AMD-SID Lazio 2016

Notizie
dalla regione:
ricerca, assistenza e
politiche sanitarie

Roma
23-24 settembre 2016
Villa Malta

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Vasculopatia periferica ne pazienti diabetici in dialis

Dott. Marco Meloni

Università degli Studi di Roma

Tor Vergata