



ATHerosclerosis of the lower extremities as a liNKed comorbidity in Patients Admitted for carDiac rehabilitation

PROGETTO THINKPAD – Workshop

“Il paziente con arteriopatia periferica in Cardiologia Riabilitativa”

Roma, 12 Aprile 2013
Milano, 17 Maggio 2013
Palermo, 11 Ottobre 2013

HIGHLIGHTS DELL'EVENTO

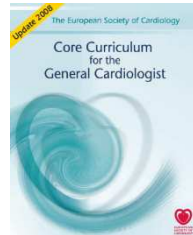
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25. Peripheral Arterial Vascular Diseases

Objectives	Knowledge	Skills	Behaviours and Attitudes
<ul style="list-style-type: none"> To be able to assess and treat patients with peripheral arterial vascular disease 	<ul style="list-style-type: none"> Describe epidemiology and pathology Describe diagnosis and assessment Describe medical and invasive (interventional and surgical) interventional management and their relative merit in different situations Identify prognosis Recall the association of peripheral vascular disease with vascular disease in other territories in particular carotid and renal arteries Recognise the causes of acute limb ischaemia and the urgency of its management 	<ul style="list-style-type: none"> Take a relevant history and perform an appropriate physical examination, especially the examination of peripheral pulses Identify the risk factors and select appropriately the management strategy keeping in mind that peripheral vascular disease is a manifestation of generalised atherosclerosis Select, use and interpret diagnostic tools appropriately including: <ul style="list-style-type: none"> Ultrasound (duplex scanning and other Doppler modalities, including ankle-brachial index) MR angiography CT angiography Angiography 	<ul style="list-style-type: none"> Appreciate the systemic nature of atherosclerosis and its implication for a patient with disease manifested within a given territory Recognise the importance of risk factor modification in prevention Encourage patients to adopt a healthier lifestyle with specific emphasis on risk factors Collaborate with specialists such as interventional cardiologists, radiologists, vascular surgeons and diabetologists

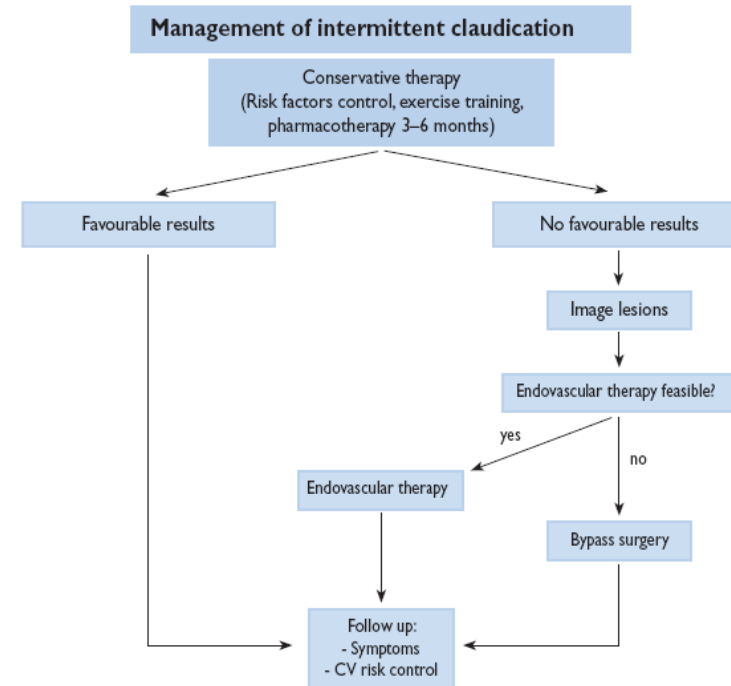
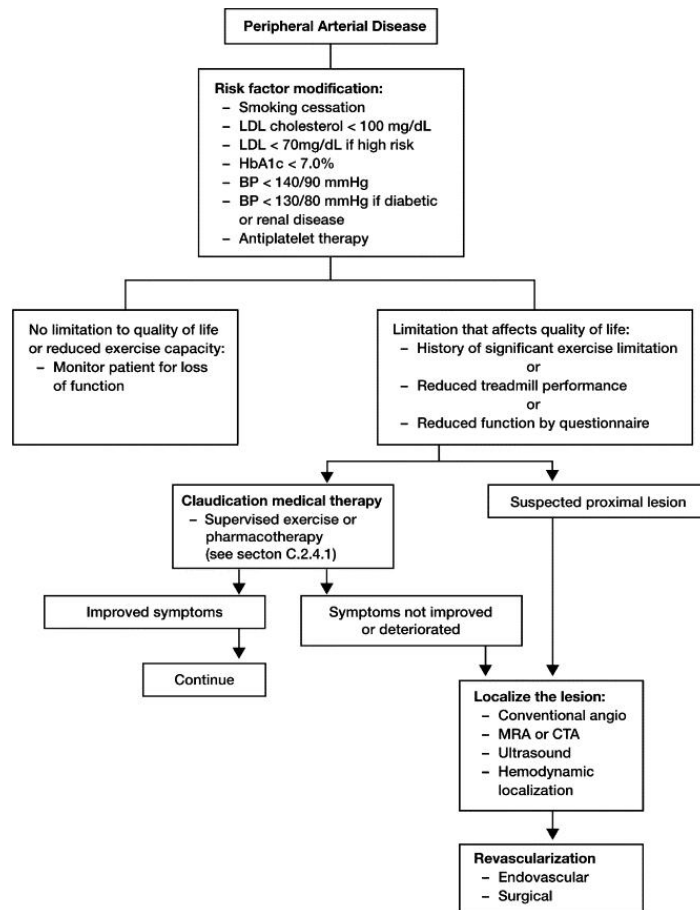
- Saper valutare e trattare
- Stimare la prognosi CV globale
- Riconoscere le urgenze vascolari periferiche
- Espandere le competenze strumentali
- Interagire con altri specialisti





ATHEROSCLEROSIS OF THE LOWER EXTREMITIES AS A LINKED COMORBIDITY IN PATIENTS ADMITTED FOR CARDIAC REHABILITATION

MONDO CARDIOLOGICO E MONDO DELLA CHIRURGIA VASCOLARE CONCORDANO NEL RITENERE UN INTERVENTO CONSERVATIVO OMNICOMPRESIVO, BASATO SULL'ESERCIZIO FISICO, UN CARDINE DEL TRATTAMENTO DELL'AOC P ARTI INFERIORI



LLGG European Society of Cardiology, 2011

Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II), 2007



Clinical staging of LEAD

Fontaine classification			Rutherford classification		
Stage	Symptoms	↔	Grade	Category	Symptoms
I	Asymptomatic	↔	0	0	Asymptomatic
II	Intermittent claudication	↔	I	1	Mild claudication
			I	2	Moderate claudication
			I	3	Severe claudication
III	Ischaemic rest pain	↔	II	4	Ischaemic rest pain
IV	Ulceration or gangrene	↔	III	5	Minor tissue loss
			III	6	Major tissue loss





Recommendations in patients with PAD: general treatment

Recommendations	Class ^a	Level ^b
All patients with PAD who smoke should be advised to stop smoking.	I	B
All patients with PAD should have their LDL cholesterol lowered to <2.5 mmol/L (100 mg/dL), and optimally to <1.8 mmol/L (70 mg/dL), or \geq 50% when the target level cannot be reached.	I	C ^d
All patients with PAD should have their blood pressure controlled to \leq 140/90 mmHg.	I	A

Recommendations	Class ^a	Level ^b
β -Blockers are not contraindicated in patients with LEAD, and should be considered in the case of concomitant coronary artery disease and/or heart failure.	IIa	B
Antiplatelet therapy is recommended in patients with symptomatic PAD.	I	C ^d
In patients with PAD and diabetes, the HbA1c level should be kept at \leq 6.5%.	I	C ^d



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CORE COMPONENTS DELL'INTERVENTO DI CR NEI PZ. CON AOC



Table 9 Core components of cardiac rehabilitation in peripheral artery disease

Components	Established/agreed issues	Class (level)	Issues requiring further evidence
Patient assessment	<p>Clinical: any exertional limitation of the lower extremity muscles or any history of walking impairment, that is, fatigue, aching, numbness, or pain</p> <p>Primary site(s) of discomfort: buttock, thigh, calf, or foot</p> <p>Any poorly healing wounds of the legs or feet</p> <p>Any pain at rest localized to the lower leg or foot and its association with the upright or recumbent positions</p> <p>Reduced muscle mass, strength and endurance</p> <p>Bilateral arm BP: palpation of peripheral arteries and abdominal aorta with annotation of any bruits and inspection of feet for trophic defects</p> <p>Ankle-brachial index measurement: values 0.5–0.95: claudication range; 0.20–0.49: rest pain; less than 0.20: tissue necrosis</p> <p>Functional capacity: markedly impaired. Peak O₂ consumption is 50% of the predicted value</p> <p>Difficulty in walking short distances, even at a slow speed, associated with impairment in the performance of activities of daily living</p> <p>To exclude occult CAD, perform treadmill or bicycle exercise testing to monitor symptoms, ST–T wave changes, arrhythmias, claudication thresholds, HR and BP responses, useful for exercise prescription</p>		
Physical activity counselling	<p>Exercise activities, such as walking, lasting more than 30 min, ≥ 3 times/ week, until near-maximal pain</p>		
Exercise training	<p>Supervised hospital- or clinic-based ET programme ensures that patients are receiving a standardised exercise stimulus in a safe environment, is effective and recommended as initial treatment modality for all patients</p> <p>Exercise–rest–exercise: each training session consists of short periods of treadmill walking interspersed with rest throughout a 60-min exercise session, three times weekly</p> <p>Treadmill exercise: more effective. The initial workload is set to a speed and grade that elicit claudication symptoms within 3–5 min. Patients are asked to continue to walk at this workload until they achieve claudication of moderate severity. This is followed by a brief period of rest to permit symptoms to resolve. The exercise–rest–exercise cycle is repeated several times during the hour of supervision. (Table 10)</p>	I (A)	<p>Usefulness of unsupervised ET programmes [IIb, (B)]</p> <p>Time course of the response to a ET programme (clinical benefits have been observed as early as 4 weeks after the initiation and may continue to accrue after 6 months of supervised ET rehabilitation three times/week and were sustained when continued for an additional 12 months)</p>
Diet/nutritional counselling	<p>Resistance training: appropriately prescribed, is generally recommended</p> <p>To achieve a serum LDL concentration < 100 mg/dl (2.6 mmol/l)</p> <p>Treatment with statin to achieve a target LDL < 80 mg/dl (1.8 mmol/l) in high risk patients</p> <p>A statin should be given as initial therapy, but niacin and fibrates may play an important role in patients with low serum HDL or high serum triglyceride concentrations (> 150 mg/dl or 1.7 mmol/l)</p>	I (B) IIa (B) IIa (C)	
Blood pressure monitoring	<p>Antihypertensive therapy to achieve a goal < 140 mmHg systolic over 90 mmHg diastolic (non-diabetics) or < 130 mmHg systolic over 80 mmHg diastolic (diabetics and individuals with chronic renal disease)</p> <p>The use of ACE-inhibitors in patients with PAD may confer protection against cardiovascular events beyond that expected from BP lowering</p>	I (A) IIa (C)	<p>Does treatment alter the progression of the disease or the risk of claudication? (antihypertensive drugs may decrease limb perfusion pressure and potentially exacerbate symptoms of claudication or critical limb ischaemia, even though most patients tolerate anti-hypertensive treatment. Beta-adrenergic-antagonist drugs have been thought to have unfavourable effects on symptoms. Critical reviews however concluded that beta-adrenergic antagonists are safe, except in the most severely affected patients [I (A)])</p>
Smoking cessation	<p>Stopping smoking is exceptionally important in PAD, smoking-cessation programmes involving nicotine-replacement therapy, and the use of medications such as bupropion or varenicline should be encouraged</p>	I (B)	
Psychosocial management			





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PRINCIPI DI CLAUDICOMETRIA



ITALIAN SOCIETY FOR VASCULAR INVESTIGATION

PROPOSTA DI REFERTAZIONE DEL TREADMILL TEST

Cognome, Nome età data/...../...../

Base	Fine sforzo		Base	fine sforzo	dopo 5'
PA arteria Omerale Dx		PA a. tibiale ant. Dx			
PA arteria Omerale Sn		PA a. tibiale post. Dx PA a. tibiale ant. Sn			
		PA a. tibiale post. Sn			

	1° esercizio	2° esercizio	3° esercizio
intervallo di marcia libera relativo	metri	metri	metri
intervallo di marcia libero assoluto	metri	metri	metri
tempo di recupero	secondi	secondi	secondi

Esame eseguito alla velocità pari a ____ km/h e con una pendenza del ____ %



I.A.C.P.R. - G.I.C.R.
Italian Association on Cardiovascular Prevention
and Rehabilitation

CON IL SUPPORTO NON CONDIZIONATO DI





TRAINING FISICO NEL PZ. CON CLAUDICATIO INTERMITTENS

Studi pre-training vs. post-training

Trial	Durata (sett.)	ICD		ACD	
		pre-test, m	post-test, m	pre-test, m	post-test, m
Larsen, · 6	26	105.2±33.4	268.3±104.5	226.9±113	626.5±423.1
Skinner, · 7	24	97.1±34.9	171.9±88.9	288.4±231	2495.3±285.2
Alpert, · 9	26	111.9±48.3	224.6±164.1	209.3±79	361.9±187.1
Ericsson, · 0	48	186.0±163	380.0±366	273±196	537±370
Zetterquist, · 0	15	191.0±18	331.0±20	320±21	>400.0
Holm, · 3	17	100.0±26.7	346.7±193.3	320±106.7	693.3±200
Dahllof, · 4	26	91.0±34.8	265.0±103	296±167	650.0±104.3
Dahllof, · 6	26	127.0±21	345.4	318±37	725
Ekroth, · 8	22	108.0±33	392.0±75	283±42	720±67
Ruell, · 4	9	67.0±59.5	402.5±267.2	283±193.2	795.5±46.4
Emst, · 7	9	59.0±37	120±52	127±59	281±91
Jonason, · 7	13	114.0±74	197±125	430±213	717±304
Carter, · 9	26	240.0±200	430±50	590±30	1000±70
Lundgren, · 9	48	67.0±35	187	183±110	459
Mannarino, · 9	26	40.0±17	75±27.6	76.4±18.7	127.4±26.3
Rosfors, · 9	26	111.0±105	270±340	575±345	924±460
Mannarino, · 1	26	50.4±22.5	95.3±30.9	80.8±33.6	150.3±35.3
Felnberg, · 2	12	96.5±56.6	816.6±894.2	205.1±94.3	1351.6±718.9

+179%

+122%

Gardner, JAMA 1995





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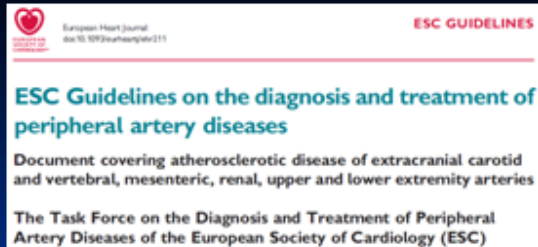
TRAINING FISICO NEL PZ. CON CLAUDICATIO INTERMITTENS

Efficacia del training fisico: le migliori componenti del programma

- Elevata durata e frequenza delle sessioni (> 30 min/sessione, >3 sessioni/sett., >6 mesi)
- Esercizi di camminata
- Raggiungimento del dolore submassimale durante l'esercizio



FINESTRA 6: FARMACI SPECIFICI PER CLAUDICATIO INTERMITTENS



Farmaci efficaci nell'aumentare l'autonomia di marcia

- **Cilostazolo**: ACD +36m (50 mg/die); +70m (100mg/die); QoL
- **Naftidrofurile**: ACD +26%; QoL
- **Pentossifillina**: ACD +59m
- **Propionil-L-carnitina**
(Buflomedil)
- **Statine**: ACD +163m
- **Inositolo/Prostaglandine/Proteoglicani**
- **IPC**: ACD +90m