Vascular Surgery Update

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Outline

- Peripheral arterial disease
  - Overview
  - Outpatient management
  - Improved community assessment
- Critical ischaemia and amputations

Peripheral arterial disease (PAD)

Affects 1 in 5 people over the age of 60 in the UK

Carries risk of limb loss and the increased risk of death from heart attack and stroke

800,000 population : Per day:

1 critical limb ischaemia (CLI)
5 diabetic foot problems

Peripheral arterial disease (PAD)

23,000 lower limb revascularisation procedures each year

5-6,000 major lower limb amputations for vascular reasons / year

PAD can present with either:

- Acute Limb ischaemia
- Chronic limb ischaemia

Acute limb ischaemia

Sudden decrease in limb perfusion

threatens limb viability

symptoms and signs develop over less than 2 weeks

Acute limb ischaemia

Pain — constantly present and persistent

Pulseless — ankle pulses are always absent

Pallor (or cyanosis or mottling)

Power loss or paralysis

Paraesthesia or reduced sensation or numbness

Perishing with cold

Acute limb ischaemia

Ischaemia due to an embolus:

Acute onset
The limb appears white (because there is no collateral circulation)
Vascular findings in the other leg usually normal

If there is ischaemia due to thrombosis:

Onset is more gradual
The leg may not be white and symptoms may be less severe
Usually preceded by worsening claudication and rest pain
Pulses in the other leg may also be absent

Chronic limb ischaemia

Can present as:

- Intermittent claudication
- Critical limb ischaemia
- Chronic limb-threatening ischaemia

Chronic limb ischaemia

Intermittent claudication

Diminished circulation leads to pain in the lower limb on walking or exercise that is relieved by rest

Critical limb ischaemia

Circulation is so severely impaired that there is an imminent risk of limb loss

Chronic limb ischaemia

Chronic limb-threatening ischaemia

more recent term

describing clinical patterns with threatened limb viability related to several factors

characterised by chronic, inadequate tissue perfusion at rest and is defined by ischaemic rest pain with or without tissue loss

It represents the end stage of peripheral arterial disease

WIFI score

Replaces Rutherford / Fontaine classifications

Wound

Ulcer	Gangrene	score
No ulcer	None	0
Small shallow (subcutaneous)	None	1
Deeper (tendon or muscle)	Gangrenous changes to limited digits	2
Extensive (extending to bone)	Extensive gangrene	3

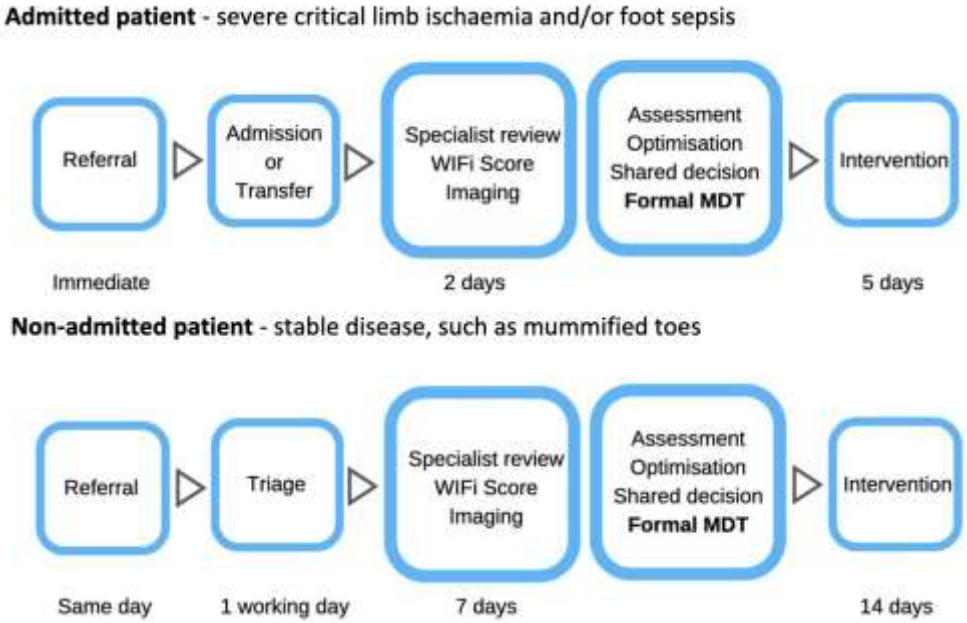
Ischaemia

ABPI	Toe pressure	Ankle systolic pressure	score
≥0.8	≥60 mmHg	>100 mmHg	0
0.79–0.6	40–50 mmHg	70–100 mmHg	1
0.59–0.4	30–39 mmHg	50–70 mmHg	2
≤0.39	<30 mmHg	<50 mmHg	3

Foot infection

Ulcer	score
No signs or symptoms of infection	0
Local infection involving skin and subcutaneous tissue only (<2 cm erythema)	1
Local infection involving deeper structures or with >2 cm erythema (ie, osteomyelitis)	2
As above with SIRS response	3

Chronic limb ischaemia - timelines



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Community management of PAD - risk factor modification

Smoking cessation :

Behavioural counselling in combination with medications (eg. Varenicline)

Antiplatelet agents:

Clopidogrel 75mg OD unless contraindicated or intolerant
Second line is aspirin 75mg OD.
Patients on anticoagulation do not benefit from additional antiplatelet agent.

The Compass trial - shown benefit from rivaroxaban 2.5mg BD plus Aspirin.

Risk factor modification

Lipid modification:

High intensity statin treatment e.g. atorvastatin 80mg OD, if tolerated.

Prior to statin initiation, identify and treat causes of secondary hyperlipidaemia:
Excessive alcohol intake, uncontrolled diabetes, hypothyroidism, liver disease and nephrotic syndrome

Risk factor modification

Weight management

If Body Mass Index is > 25, consider referral for dietary advice and provide a goal for weight loss

Diabetes

Care should be coordinated with the diabetes team
Aim for HbA1c of <48mmol (higher target if elderly)
Manage type 1 and type 2 diabetes according to National guidelines

Risk factor modification

Hypertension

Blood pressure <140/90 mmHg in the outpatient clinic
or
Average ambulatory blood pressure recording of <135/85 mmHg

In patients aged > 80 years, aim for blood pressure of <150/90 mmHg

Risk factor modification

Exercise programmes:

Supervised preferable to unsupervised

Duration of exercise

At least 30-45 minutes per session

At least three times a week

At least 12 weeks

Assessment of PAD

Journal of *Clinical Medicine*

MDPI

Article

Ankle Doppler for Cuffless Ankle Brachial Index Estimation and Peripheral Artery Disease Diagnosis Independent of Diabetes

Alexander D. Rodway [1,2], Darren Cheal [2], Charlotte Allan [1], Felipe Pazos-Casal [1], Lydia Hanna [3], Benjamin C. T. Field [1,4], Ajay Pankhania [1], Philip J. Aston [5], Simon S. Skene [4], Gary D. Maytham [1,6] and Christian Heiss [1,4,*]

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Cuffless eABPI

Doppler acceleration index

Systems being developed to automate this to allow simple community assessment

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Questions?

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Amputations

Amputee Climber Makes History on Everest

Six years after a Nepal banned double amputee climbers from Everest, Hari Budha Magar has reached the summit

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Amputations

5-6,000 major lower limb amputations for vascular reasons / year

Outcomes following amputation often overestimated

Vascular patients have high comorbid load

Study undertaken to determine outcomes in vascular patients

Functional outcome after amputation

Prospective 12-year database – Douglas Bader Unit, Roehampton

Patients undergoing amputation due to PAD / Diabetes

Mobility at 6/52 and 6/12

TUAG (Time to Up And Go)
2-min walking test
SIGAM : *21 items that are scored either yes or no by participants*

Mortality

Results

714 MLAs | 67 years | 78% male | 3 : 2

		Female	Male	Difference
Age		67	67	p=0.564
Amputation Level	BKA	96	334	
	TKA	7	22	p=0.904
	AKA	57	198	
		%	%	
Diabetes melitus		44.0	44.7	p=0.883
Hypertension		51.9	55.9	p=0.517
Hyperlipidaemia		32.1	30.2	p=0.744
Ischaemic heart disease		42.0	44.1	p=0.734
Atrial fibrillation		14.8	12.8	p=0.645
Congestive cardiac failure		9.9	10.8	p=0.818
Chronic kidney disease		23.5	25.0	p=0.796
COPD		24.7	15.3	p=0.048
Cerebrovascular Disease		19.8	15.3	p=0.335
Cancer		16.0	11.1	p=0.230
Psychiatric Problems		41.4	33.3	p=0.104
MFI-5 Score		2.80±1.09	2.79±1.07	p=0.521

5Y Death

BKA/AKA: 36%

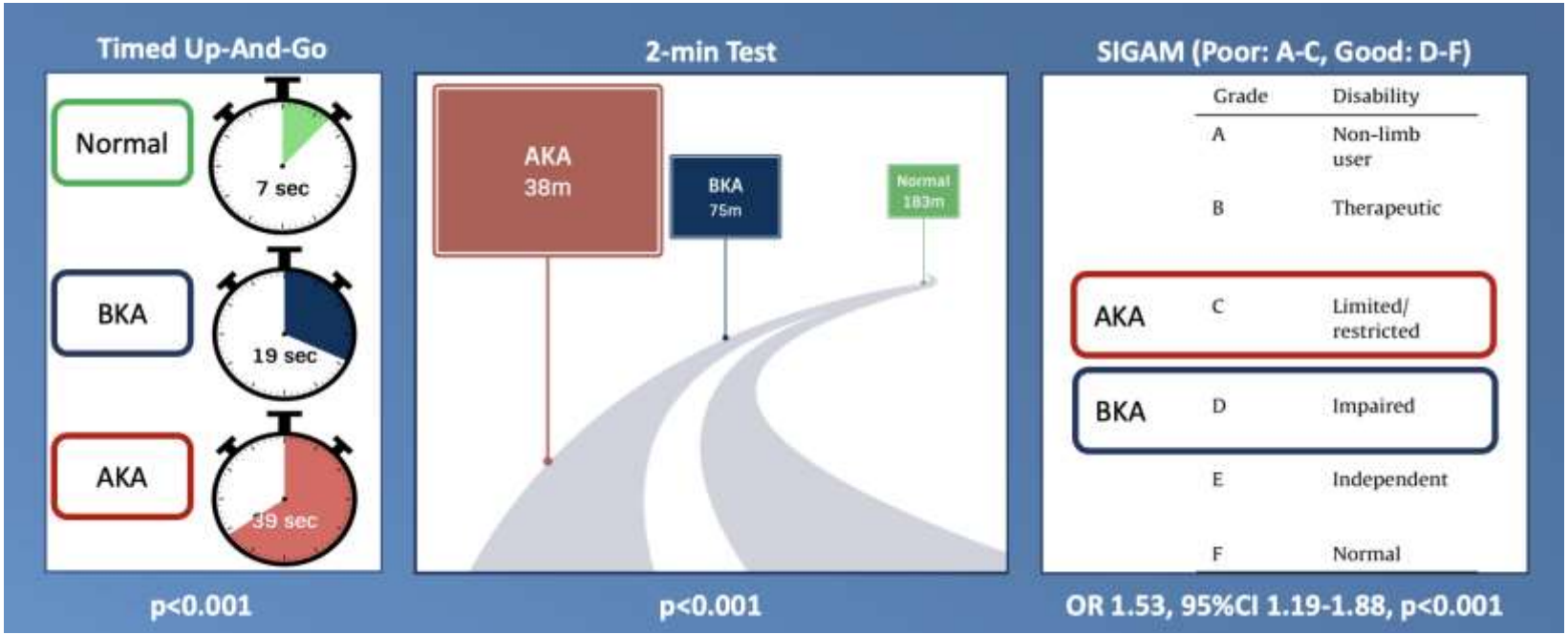
36% of BKA
37% of AKA

Poor Mobility

BKA/AKA: 61%

39% of BKA
74% of AKA

Functional outcome



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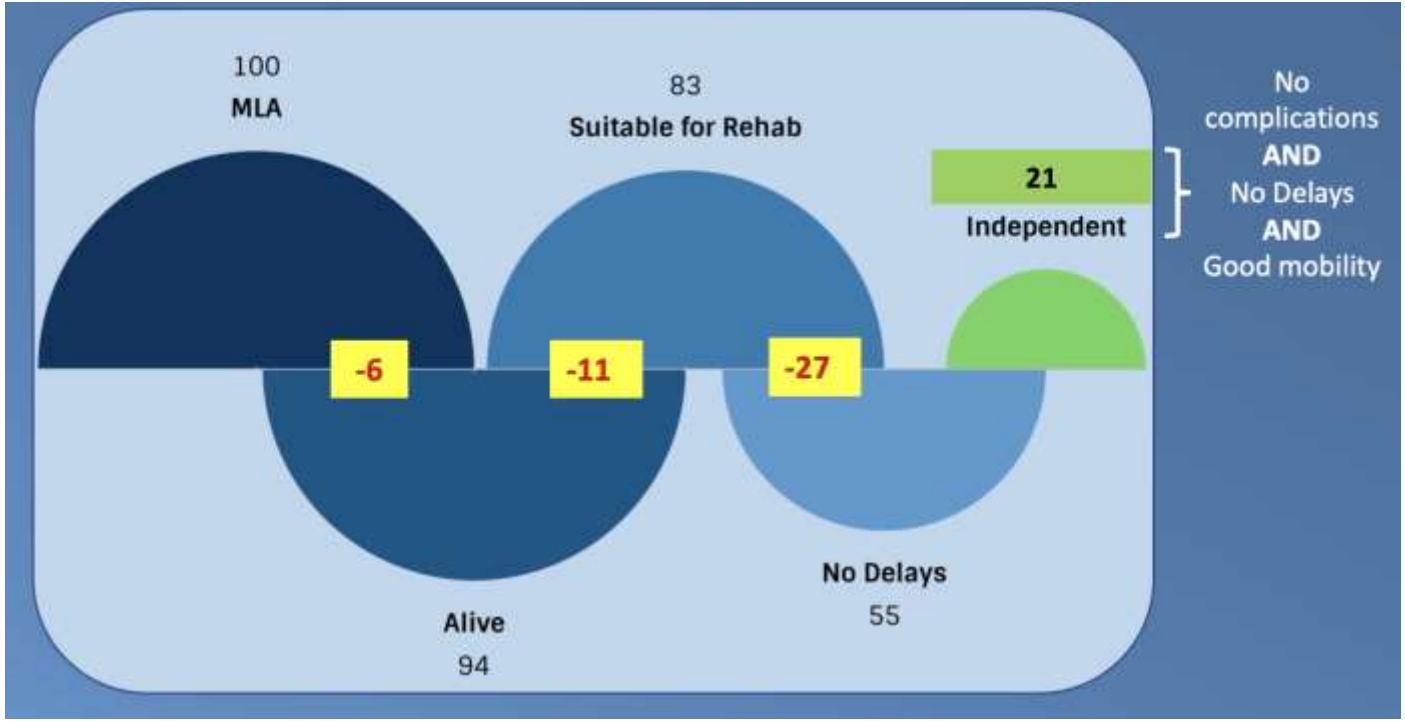
Patient journey



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Psychiatric burden

Study design

Mixed-methods

Dedicated social psychologist in MDT

1-to-5 sessions per patient + semi-structured interview

Demographics and Amputation status

Results

67 patients (clinic and ward)

Median age was 65 years /. 19 (28.3%) were female

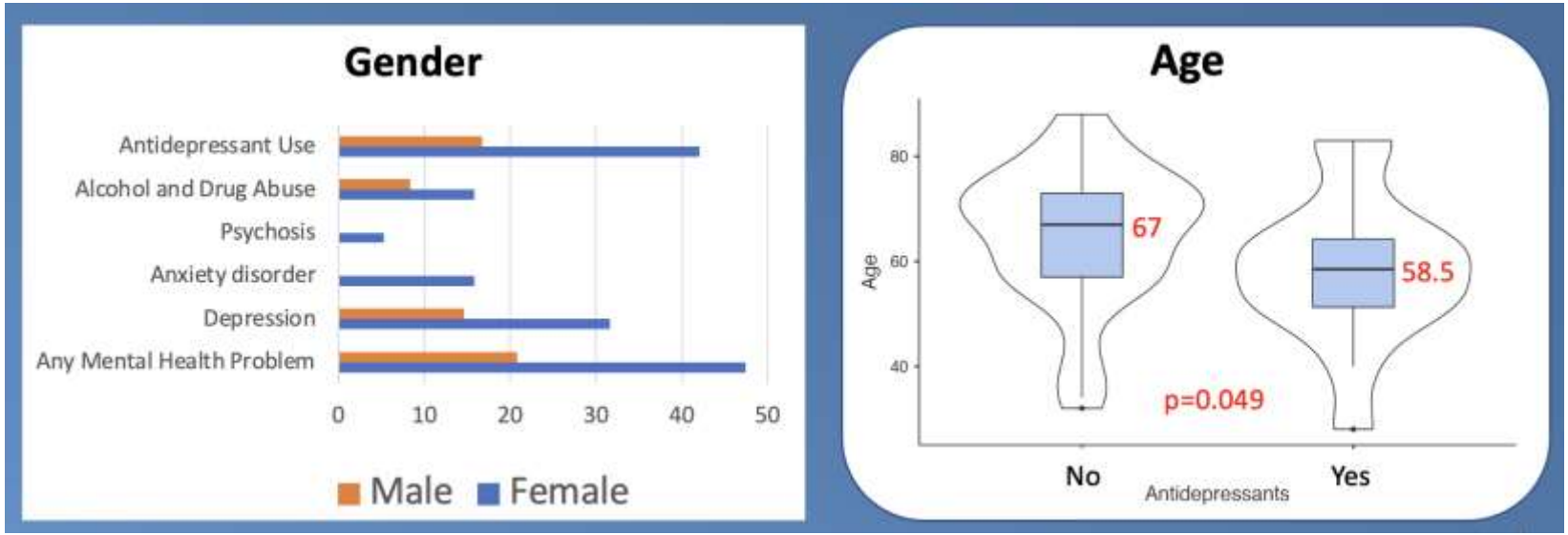
No-Amp : Minor-Amp : Pre-MLA was 2.3 : 1.9 : 1

24 (35.8%) of patients lived alone

6 (9.0%) had no documented next-of-kin

8/67 (11.9%) were Black, but in pre-MLA group – 30.8%

Demographic differences



Psychosocial Implications in Surgical Management of Diabetic Foot Disease. A Wafi et al

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Patient concerns

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Discussion points

- Amputations have poor outcome in vascular patients
- Significant mental health burden for patients
- Psychosocial problems common in all stages of disease
- Symptomatic management may be preferable in some patients

Questions?

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