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June 9-11 2013



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ENDOVASCULAR THERAPY
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MEDIUM-TERM RESULTS OF PRIMARY STENTING IN THE MANAGEMENT OF FEMOROPOPLITEAL OCCLUSIVE DISEASE

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Faculty disclosure

I have **no financial relationships** to disclose.

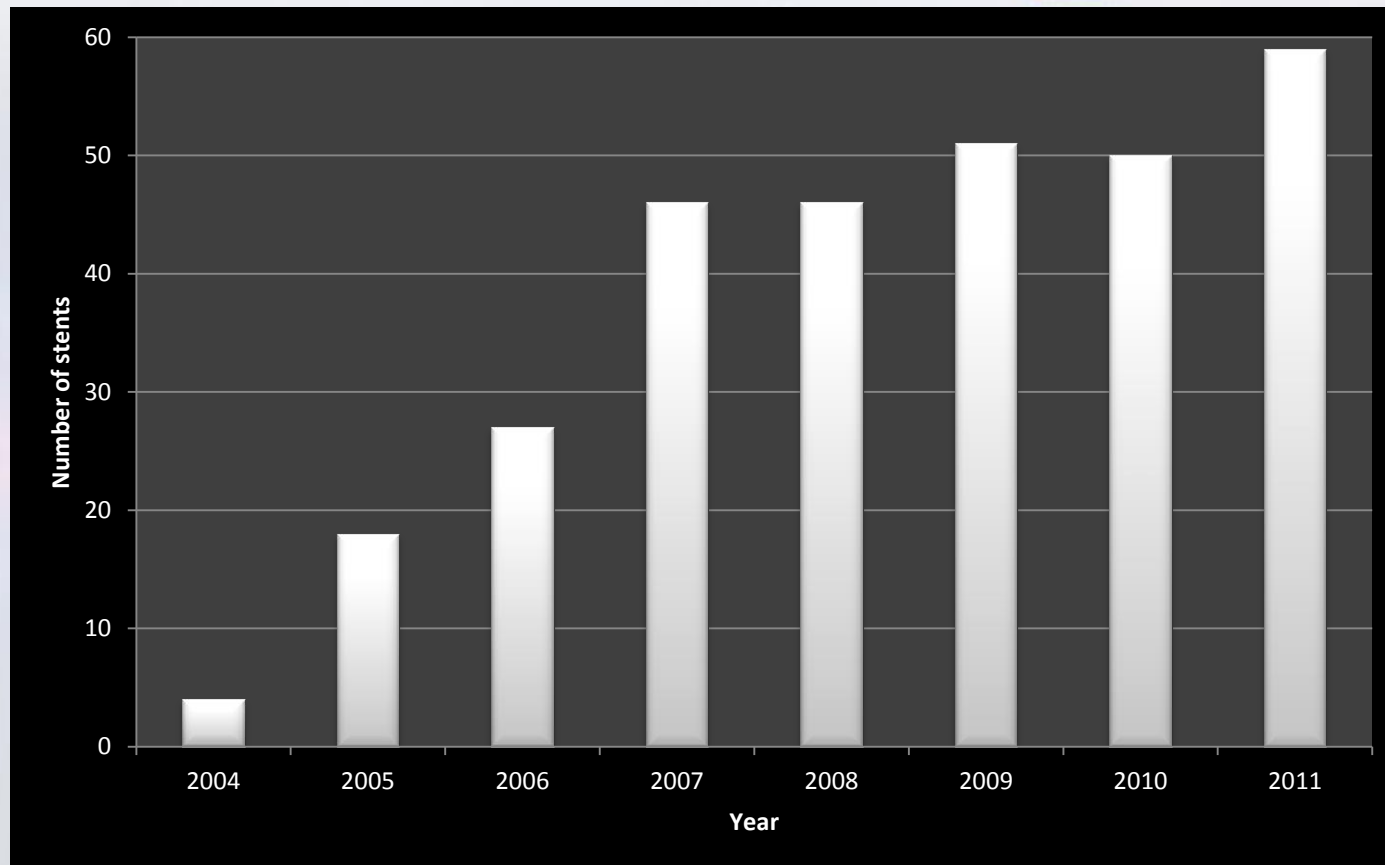


- Peripheral arterial disease (PAD) occurs in 3% to 10% of the general population
- The strategy of revascularisation in symptomatic PAD has shifted from surgical towards endovascular treatment
- The optimal form of endovascular revascularisation remains unclear
 - ❖ Angioplasty
 - ❖ Stenting
 - ❖ Drug-eluting endovascular treatments

Usage of endovascular stents at UHS



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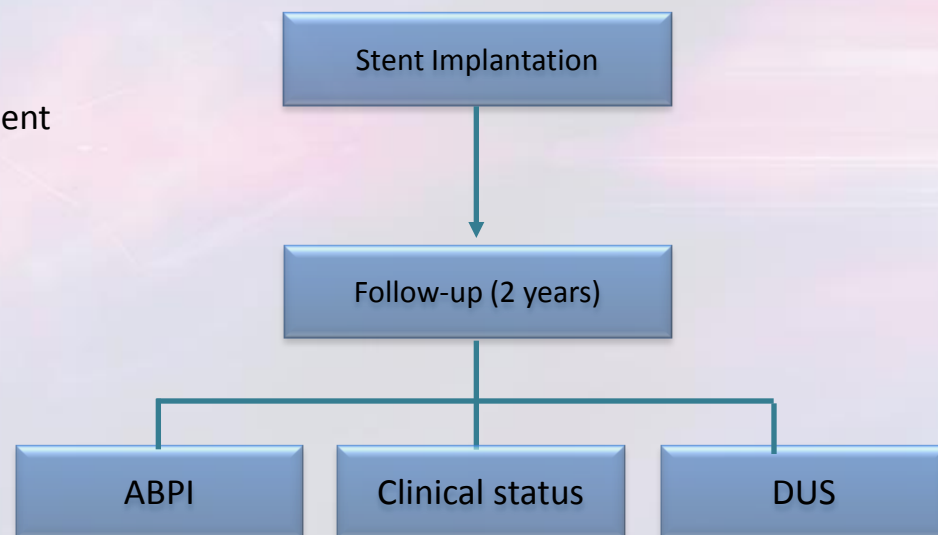


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1. To investigate the **medium-term durability** of primary FP stenting
2. To identify **factors** that may influence **patency** rates



- 7-year period (2004 – 2011)
- Single-centre retrospective study
- All consecutive patients undergoing FP stent implantation for de novo lesions
- 2-year follow-up
 - ❖ Ankle-Brachial Pressure Index (ABPI) measurement
 - ❖ Duplex Ultrasound (DUS)
 - ❖ Clinical status assessment
- Statistical analysis
 - ❖ Cox proportional hazard methods



Patient & Lesion Characteristics



Patient Characteristics	
No. of patients	249
Median follow-up duration (mo)	24 (IQR 16-27)
Median age (yr)	74 (IQR 67-82)
Male gender (%)	169 (67.9)
Hypertension (%)	199 (79.9)
Hypercholesterolaemia (%)	163 (65.5)
Diabetes (%)	95 (38.2)
Current/ex smoker (%)	160 (64.3)
Ischaemic Heart Disease (%)	99 (39.8)
Chronic renal failure (%)	38 (15.3)
Rutherford Classification II, III, IV, V, VI	31/40/50/128/0
Pre-intervention antiplatelet therapy (%)	148 (58.2)

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➔ 263 Limbs

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Lesion Characteristics

- Median lesion length 13cm (IQR 8-24)



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SFA 52%

SFPA 34%



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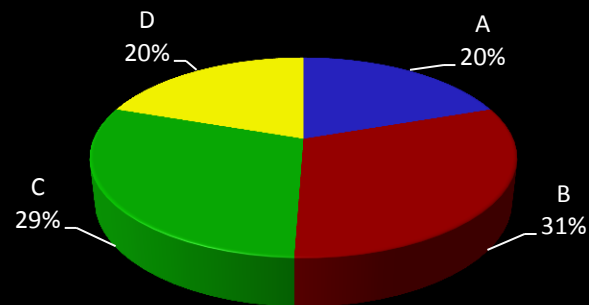


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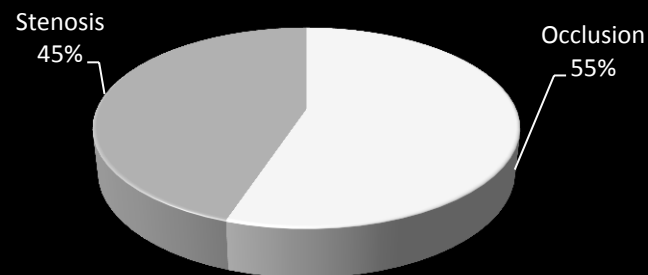
SFPA 34%

PA 14%

TASC II Classification

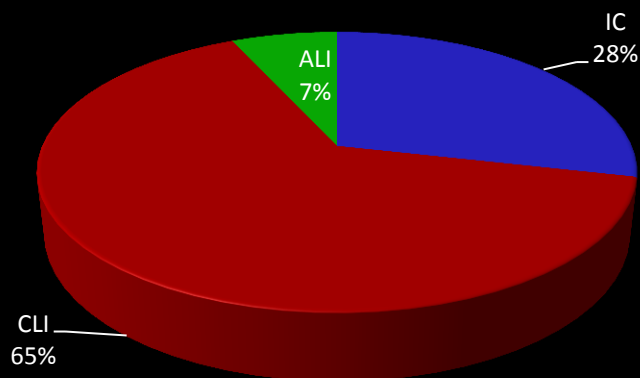


Lesion Type



Primary Intervention

Clinical Indication



- Total 441 stents deployed
- Technical success achieved in 251 limbs (95.4%)
- Median follow-up time 24mo (IQR 16-27)

Failure & Secondary Intervention

- Treatment failure found in 122 limbs (46.4%)
 - ❖ Median time to failure 7mo (IQR 2.3-13.8)



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Type of secondary intervention	No. (%)
Angioplasty alone	49 (40.2)
Angioplasty + stenting	25 (20.5)
Surgical bypass	15 (12.3)
Amputation	13 (10.7)
Conservative	20 (16.4)



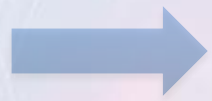
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28.4% requiring further intervention



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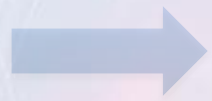
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Limb Salvage

- Overall 93%
- Critical Limb Ischaemia 89%



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Patency Rates

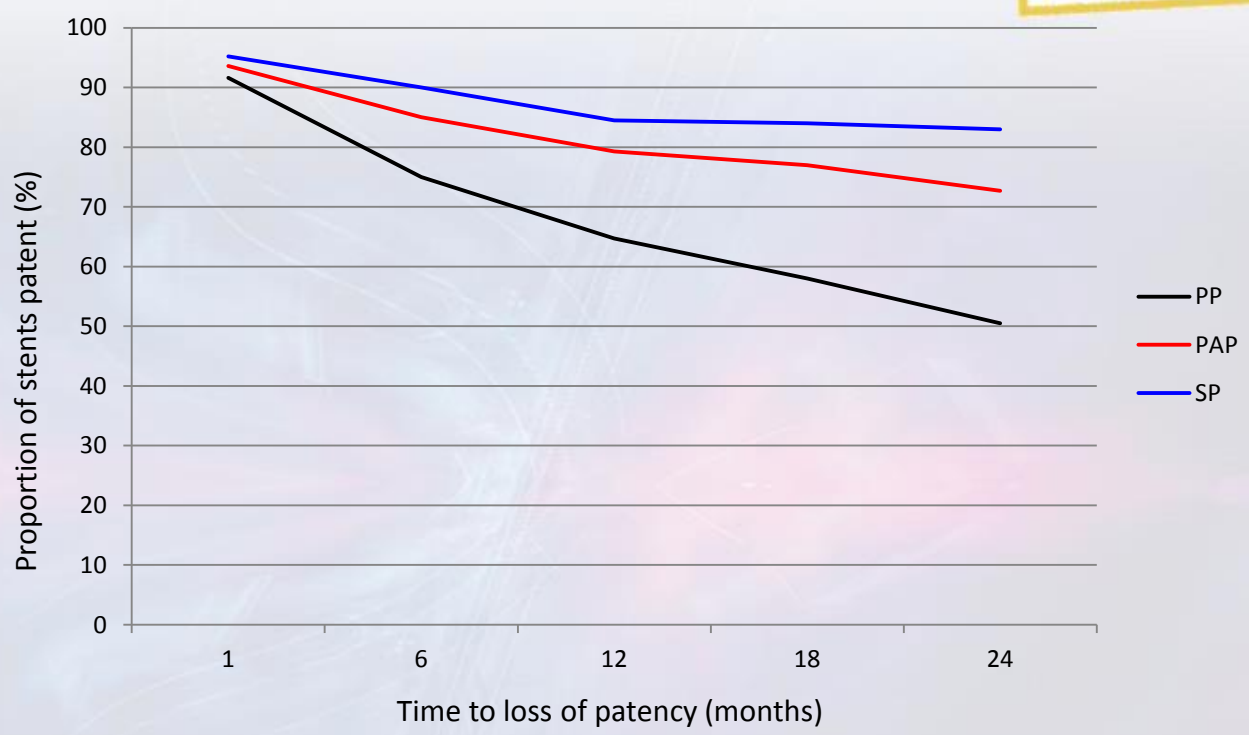


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	30d (n=250)	1yr (n=213)	2yr (n=194)
PP (%)	91.6	64.7	50.5
PAP (%)	93.6	79.3	72.7
SP (%)	95.2	84.5	83

Factors Affecting Patency

Univariate Cox proportional hazard model

Variable	Hazard Ratio (95% CI)	P-value
Age (yrs)	0.97 (0.94-1.00)	0.85
Gender	1.49 (0.73-3.05)	0.28
IHD	0.78 (0.37-1.67)	0.53
Diabetes Mellitus	0.43 (0.19-1.01)	0.048
Hypertension	0.56 (0.26-1.21)	0.14
CKD	0.89 (0.27-2.93)	0.85
Hypercholesterolaemia	1.02 (0.48-2.19)	0.95
Antiplatelet	1.34 (0.63-2.86)	0.45
Indication		
Claudication	Ref	
CLI (rest pain/ulcer)	0.71 (0.34-1.50)	0.37
Lesion type		
Stenotic	Ref	
Occlusive	2.44 (1.09-5.49)	0.031
TASC		
AB	Ref	
CD	2.41 (1.0-3.88)	0.035
Site		
SFA	1.78 (0.83-3.81)	0.14
SFPA	0.51 (0.21-1.24)	0.14
Popliteal	0.94 (0.33-2.69)	0.91
Stent No.		
1	Ref	
≥2	3.45 (1.46-4.97)	0.019



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Multivariate Cox proportional hazard model

Variable	Hazard Ratio (95% CI)	P-value
Lesion type		
Stenotic	Ref	
Occlusive	2.32 (1.02-5.29)	0.044
TASC		
AB	Ref	
CD	2.27 (1.01-5.12)	0.048
Stent No.		
1	Ref	
≥2	2.40 (1.21-4.19)	0.037



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- Primary FP stenting achieves medium-term patency rates **comparable to angioplasty**
- In addition to **TASC C/D** and **occlusion** lesions, deployment of **multiple overlapping stents** is significantly associated with reduced durability.
- This should be carefully considered to optimise patient selection and operative decision-making for this procedure.

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Thank you

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Definitions

Term	Definition
Primary Patency	Uninterrupted patency at the site of disease, with no further intervention
Primary Assisted Patency	Patency not lost but maintained by further endovascular intervention (e.g. angioplasty)
Secondary Patency	Stent patency restored after occlusion AND/OR any problem with the stent graft requiring surgical reconstruction (e.g. bypass)
Treatment failure	Restenosis ($\geq 50\%$) or occlusion of treated segment
Restenosis	Defined as $\geq 50\%$ reduction in luminal diameter on follow-up duplex scan
Technical success	Residual stenosis $< 30\%$ on post-intervention angiography
Limb Salvage	Avoidance of major amputation
Acute failure (<30d)	Within 30d: MACE (not death), acute thrombosis/restenosis/occlusion, stent fracture
Late failure (>30d)	After 30d: MACE (not death), acute thrombosis/restenosis/occlusion, stent fracture