INTERVENTION

Indications
(i)Life-limiting claudication (despite best medical management)
(ii)Critical limb ischaemia (rest pain/tissue loss)
(iii)Acute Limb Ischaemia

1. Angioplasty
NICE 2012: after 2^{o} prevention/no improvement with SEP/suitable from imaging
(i)Stenoses <70% (ii) <10cm lesions

Complications:
Bleeding: manage with pressure/thrombin/stent graft/surgery
Dissection
Pseudoaneurysm
Rupture: severe pain; check angio always as not always symptomatic; balloon tamponade +/-surgery
Embolism: thrombus/plaque/cholesterol; occlusive>stenotic disease
Stent-related: misplacement/infection etc

2. Endarterectomy: (i)Primary revascularisation (ii)improve inflow for bypass/stent distally

3. Bypass surgery
(i)angio unsuitable (ii) angio unsuccessful (iii)imaging appropriate for bypass
Requires (i)inflow (ii) conduit (iii)outflow (iv)patient
Conduits: autologous vein (+/-reversed); prosthetics (PTFE, Dacron etc)
5yr patencies: above knee= 43% graft, 62% vein
below knee= 27% graft, 68% vein
Risks: dissection/embolization/graft complications

4. Amputation: Only when all revascularisation options considered →unreconstructable CLI/unsalvageable ALI (NICE)

SUPRAINGUINAL DISEASE ie aorto-iliac disease

TYPE A – USUALLY PTA	Stenosis <3cm
TYPE B – PTA PREFERRED	Stenosis 3-10cm Unilateral CIA/EIA occlusion
TYPE C – SURGERY PREFERRED	Bilateral CIA occlusion Unilateral CIA+EIA occlusion
TYPE D – USUALLY SURGERY	Aortic occlusion Bilateral EIA occlusion Extension to aorta/femoral

ENDOVASCULAR

Abdominal aorta

1º stenting: 5yr patency 50% with few complications (the usuals)

Iliacs

Stenosis –angioplasty limited by recoil/intolerance to sufficient dilatation → SVS recommend **1º stenting**

Occlusion – **stent (SEMS)** + balloon **angioplasty in SEMS** (CFA disease: CFE+ stent as stent in CFA will fracture)

Angioplasty vs. Stent: NICE 2012 recommends BMS for iliacs in IC

DIST (RCT): 1º stent vs PTA +/- stent in iliacs; recommends PTA + selective stent use in int. claudication

STAG (stent vs angio in complete occlusion): no difference in patency but stent= fewer embolic complications

SURGERY

Aorto-iliac surgery: if EVT fails/not suitable +imaging suitable for surgery

Extra-anatomic: if aortic surgery high-risk/patient unfit (less durable)

Abdominal aorta:

Aortobifem if fit||**Aorto-uniliac stent+fem-fem** if unfit||**Axillo-bifem:**last resort if unfit/hostile abdomen (5% mort, 74% 5yr limb salvage)

Conduit: Dacron favoured (handling+suturing characteristics); PTFE more resistant to infection

Iliacs:

Inline recon supplanted by endovascular treatment; CFE done as adjunct if disease in CFA

Unilateral iliofemoral bypass : extensive EIA disease/fails endovasc/diseased into femorals

Iliofemoral crossover: if no ipsilateral iliac inflow, use other iliac

Fem-fem crossover: if no ipsilateral inflow at all

Femoral endarterectomy + profundaplasty

INFRAINGUINAL

	FEMORAL	POPLITEAL	CRURAL
TYPE A – USUALLY PTA	SFA stenosis <10cm	Occlusion <5cm	None
TYPE B – PTA PREFERRED	SFA stenosis 10-15cm	Stenosis	None
TYPE C – SURGERY PREFERRED	SFA stenosis >15cm	Recurrent disease	Stenosis <4cm; Occlusion <2cm
TYPD D – USUALLY SURGERY	SFA occlusion		Diffuse disease Occlusion >2cm

ENDOVASCULAR

Fem-pop:
NICE 2012: not for 1º stent in fem-pop disease (stents have good patency but not enough evidence over angio alone)

Crural arteries:
Recanalise appropriate **angiosome**
Need good **inflow**/**stenotic**>occlusive disease/**focal**>diffuse disease

SURGERY

SVS: infra-inguinal bypass surgery (i)more functional improvement (ii)better durability with less reintervention

(a)Femoral endarterectomy
CFA/PF origin: generally felt unsuitable for angio/stenting
Dacron/PTFE: no difference; supported graft has higher 5/10yr patency (Mingoli et al)
Can do iliac angio/stenting and fem-distal at same time

(b)Infra-inguinal bypass: *more durable + more functional improvement than angioplasty*
Fem-pop: SFA occlusion/SFA stenosis>15cm/popliteal recurrence
Fem-distal: high limb loss so only (i)CLI severe rest pain (ii)ALI limb salvage

Inflow:
CFA usual starting point but SFA/PF if short vein || CFE if necessary

Conduit:
NICE 2012: autologous vein; SVS: vein if crossing knee
Prosthesis: out of favour in fem pop bypass (patency/infection concerns); distal vein cuff with PTFE improves patency (JVRG)
LSV:
5yr patencies in CLI: vein 66% any level; PTFE 47% above knee/33% below knee
5yr patencies (TASC): vein 70%, PTFE 25% for fem-distals

Outflow:
Fem-pop: below knee popliteal preferred for distal anastomosis (above knee: if short vein and disease free here)
Fem-distal: depends on angiosome needed (PTA/ATA/P) and need calf vessel patent into foot

Graft surveillance: 3 RCTs= no benefit; duplex 6 weeks identifies high risk grafts (Mofidi et al); observ data= early scan for PTFE