Ontario Health
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Acute Limb Ischemia (ALI) Assessment, Consultation & Referral Guide

This guide is intended as a support tool to assist the emergency department clinician with initial diagnosis, immediate clinical management and vascular surgeon consultation and/or transfer to a vascular program for patients with acute limb ischemia and should be applied using clinical judgement.

Acute limb ischemia is a vascular emergency that threatens limb viability and must be recognized rapidly. Consultation with a vascular surgeon should be initiated emergently within 30 minutes of first medical contact with a patient with suspected ALI.[1,2,4,6]

If vascular services are not available on-site, **phone CritiCall Ontario** to facilitate all ALI consultations with a vascular surgeon and transfers to a vascular program.

This information is for guidance only and is not a requirement.
*Time goals are not standards for medicolegal purposes. Times will vary based on patient presentation and other circumstances.
Consult, transfer and repatriation of the patient is supported by the Ontario Life or Limb Policy.[7]
Final decision to transfer remains at the discretion of the referring and receiving physicians.

References

1. Gerhard-Herman MD, Gornik HL, Barrett C, et al. 2016 AHA/ACC guideline on the management of patients with lower extremity peripheral artery disease: executive summary: a report of the American College of Cardiology/American Heart Association Task Force on clinical practice guidelines. *J Am Coll Cardiol,* 2017;69(11):1465-1508.
2. Norgren L, Hiatt WR, Dormandy JA, et al. Inter-society consensus for the management of peripheral arterial disease (TASC II). *J Vasc Surg,* 2007;45(Suppl S):S5-67.
3. Santistevan JR. Acute limb ischemia: an emergency medicine approach. *Emerg Med Clin North Am*, 2017;35(4):889-909.
4. Baker S and Diercks DB. Acute Limb Arterial Ischemia, *Emerg Med,* 2018;65-71.
5. Rutherford RB. Clinical Staging of Acute Limb Ischemia as the Basis for Choice of Revascularization Method: When and How to Intervene. *Semin Vasc Surg*, 2009;22:5-9.
6. Ram BL and George RK. Nontraumatic acute limb ischemia – presentation, evaluation and management. *Indian J Vasc Endovasc Surg*, 2017;4:192-197.
7. Ontario Life or Limb Policy: http://www.health.gov.on.ca/en/pro/programs/criticalcare/docs/provincial_life_or_limb_policy.pdf

*Time goal: **≤30 minutes** from first medical contact to CritiCall activation

CLINICAL PRESENTATION

- ☐ **Acute (<2 weeks), severe hypoperfusion** of the limb characterized by a **painful, pulseless limb** with **paresthesias** and varying degrees of **paralysis.**[1,3,4] (Consider the 6 Ps: pain, pallor, pulselessness, poikilothermia (cold), paresthesias and paralysis)
- ☐ Proceed to rapid assessment.

RAPID ASSESSMENT

- ☐ Focused clinical assessment of **symptom duration** and **pulse, motor and sensory deficits.**[1-3,4,6]
- ☐ **Bedside vascular doppler arterial assessment** using a hand-held device if available and/or a **bedside ankle-brachial index (ABI)** if possible.[1-6]
- ☐ **Phone CritiCall Ontario** to consult with a vascular surgeon prior to performing additional imaging.[3,4]
- ☐ **Bloodwork** including CBC, creatinine, electrolytes and CK along with an **ECG.**[2,3,4,6] Do not delay consultation with a vascular surgeon for completion.

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CONSULT WITH VASCULAR SURGEON

Acute limb ischemia is an emergent diagnosis, but acute limb ischemia with motor paralysis is a true vascular emergency.

For all patients with suspected or diagnosed ALI, immediate consultation with a vascular surgeon should be facilitated by phoning CritiCall Ontario.[1,2,4]

Discussion with vascular surgeon to include:

- ☐ Summary of assessment including symptom duration, motor and sensory deficit severity and results of doppler and/or ABI studies if completed
- ☐ Further imaging to be done based on viability of limb and availability of imaging modalities at referring hospital
- ☐ Key comorbidities
- ☐ Need and preparation for transfer

IMMEDIATE CLINICAL MANAGEMENT

For all patients with suspected and/or diagnosed ALI:

- ☐ Immediate initiation of the full anticoagulant dose of IV unfractionated heparin, unless contraindicated (e.g. heparin allergy, heparin-induced thrombocytopenia (HIT), acute ongoing bleeding).[1-6] Do not delay initiation while awaiting consultation with a vascular specialist.[3]
- ☐ Pain management[3,6]
- ☐ Oxygen[3]
- ☐ IV fluids[3,4,6] (Resuscitation with IV crystalloid fluids in the hypovolemic patient is advised. It may be beneficial to use normal saline and avoid potassium-containing fluids until serum potassium levels and renal function have been determined.[3])

RAPID TRANSFER

- ☐ Arrange immediate transfer if required.[1] For cases confirmed Life or Limb, transportation will be arranged by CritiCall Ontario. For cases not confirmed Life or Limb, transportation to be arranged by referring hospital.[7]
- ☐ Need for physician or nurse escort to be determined by referring and/or receiving physician.
- ☐ Encourage transfer service to notify receiving hospital 30 minutes prior to expected arrival.

RECEIVING HOSPITAL

- ☐ Emergent evaluation and intervention by receiving vascular team.

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