

LYMPHANGIOLEIOMYOMATOSIS

Is this why she's breathless?

What is lymphangioleiomyomatosis?

Lymphangioleiomyomatosis (LAM) is a rare lung disease affecting women – usually of child bearing age.

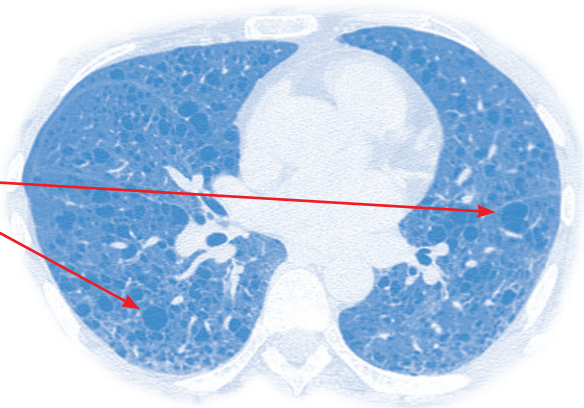
In the lungs

- LAM produces multiple air-filled cysts up to 5cm diameter, causing dyspnoea, haemoptysis or pneumothorax. Bronchial thickening from smooth muscle proliferation produces obstruction. Chylothorax may result from lymphatic blockage.
- Asthma-like signs such as cough, wheezing, crepitations and low FEV1 may be present. FEV1 often improves with a bronchodilator.
- CXR is often normal. A high resolution CT scan may be necessary to detect the cysts.

In the kidneys

- Women with LAM may have angiomyolipomas (AMLs) or lymphangiomas within the retroperitoneal space. Unless they bleed or produce a mass effect, or are associated with chylous ascites, they are usually asymptomatic.
- AMLs and lymphangiomas are easily detected on US or CT scans.

High-resolution CT scan showing bilateral lung cysts (arrows) randomly distributed throughout the lungs. The intervening lung parenchyma is normal.



LAM pathophysiology

- LAM cells act like cancer cells. A single spontaneous gene mutation occurs in a smooth muscle cell, probably in the uterus. Mutant cells metastasise to the lungs, kidneys and abdomen via the lymphatics. They proliferate in the target organs, producing cysts and parenchymal destruction.
- A mutation on chromosome 16 results in '**Sporadic LAM**', the more rapid and destructive variant of LAM. '**TSC-LAM**' is more common but less aggressive, and is associated with the chromosome 9 mutation of tuberous sclerosis complex.
- Both forms of LAM result from deregulation of the mTOR pathway which controls cell division. Immunosuppressant and anti-fibroproliferative drugs such as sirolimus (rapamycin) and everolimus are currently used in treatment trials.
- LAM is progressive, irreversible and debilitating, but the rate and degree of progression varies enormously between women.
- Lung transplantation is a last resort, but can have good prospects.

LAM... it's breathtaking!



What to do if you suspect LAM

- Order a high resolution chest and abdominal CT +/- renal US.
- Measure full lung function.

What to do if you discover LAM

- Reassure your patient. Being diagnosed with LAM is devastating, but it is not a death sentence. Many women live long and productive lives after diagnosis.
- If the condition is advanced or deterioration is rapid, seek advice from a respiratory physician with expertise in LAM.
- Let your patient know that LARA keeps a register of women with LAM and provides information, support and contacts.

Future directions

- A blood test for VEGF-D (Vascular Endothelial Growth Factor - D) may assist early diagnosis.
- Rapamycin (sirolimus) and everolimus maybe be effective in treating some women with pulmonary and renal LAM.
- Researchers in Australia and worldwide are endeavouring to find a cure for LAM.

Medical enquiries

LARA's Medical & Scientific Board is comprised of Australian and New Zealand physicians with expertise on LAM who can provide accurate up-to-date information on its treatment and management.

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For details of LAM specialists in other states of Australia and in New Zealand, contact admin@lara.org.au

LARA is a not-for-profit organisation dedicated to raising awareness of LAM and funding research.

Visit www.lara.org.au for further information.

