

# Transformed Lymphoma

## OVERVIEW

Lymphoma is the 6th most common cancer in Australia in adult men and women. It can affect people of all ages and is the most common blood cancer. Lymphoma is a cancer of the immune system and affects lymphocytes which are a type of white blood cell. When lymphocytes gain DNA mutations they divide and grow uncontrollably resulting in lymphoma.

There are two main types of lymphocytes called B lymphocytes (B-cells) and T lymphocytes (T-cells). Lymphomas caused by B-cells are more common and account for around 85% of lymphoma cases and lymphomas caused by T-cells account for around 15% of lymphoma cases. The first lymphoma to be discovered was called "Hodgkin lymphoma" (around 15% of all B-cell lymphomas), after Thomas Hodgkin, who described it. All subsequent lymphomas discovered were called "non-Hodgkin lymphoma" (around 90% of all lymphomas, both B-cell & T-cell lymphomas).

There are over 80 different subtypes of lymphoma, that are classified according to its clinical behaviour. "Aggressive" (high grade or fast growing) lymphomas are those that grow quickly, usually weeks to months and need treatment immediately. "Indolent" (low-grade or slow growing) lymphomas usually develop over years and often are not treated straight away but are monitored. It is important to know your subtype of lymphoma. Lymphoma cells can travel to any part of the body and be found in lymph nodes, the bone marrow, the spleen, blood, bone, skin and almost any organ or tissue.

## TRANSFORMED LYMPHOMA

A transformed lymphoma is a lymphoma that was initially diagnosed as indolent (slow-growing) but has transformed into an aggressive (fast-growing) disease. Indolent lymphomas are typically made up of small, slow-growing cells. If the proportion of larger, faster-growing lymphoma cells increases, the lymphoma begins to behave more like an aggressive lymphoma such as diffuse large B-cell lymphoma. This process is known as 'transformation'. Although indolent B-cell lymphomas, are most commonly associated with transforming to aggressive disease, indolent T-cell lymphomas can also progress to aggressive disease.

When we talk about transformed lymphoma we mean the switch from a slow-growing indolent disease with an indolent clinical history to a more aggressive appearance under the microscope and a more aggressive clinical history. It is important to make these distinctions because there are some people who have indolent follicular lymphoma and then they end up with quite aggressive disease but their biopsy still looks like follicular lymphoma. That is not a transformation, that is a more aggressive behaviour of a follicular lymphoma. Transformation is important because if your lymphoma 'transforms' into a more aggressive subtype, you will need a different type of treatment.

## WHAT TYPES OF LYMPHOMA CAN TRANSFORM?

Transformation can occur with any low-grade non-Hodgkin lymphoma, but in particular:

- Follicular Lymphoma – most common transformation
- Marginal Zone Lymphomas (including MALT lymphomas)
- Lymphoplasmacytic lymphomas (including Waldenström's macroglobulinaemia)
- Small Lymphocytic Lymphoma / Chronic Lymphocytic Leukaemia (this transformation is called Richter syndrome)
- Nodular Lymphocyte-Predominant Hodgkin Lymphoma (NLPHL)
- Cutaneous T-cell lymphoma (CTCL)

## WHAT CAUSES THE TRANSFORMATION?

The genes in indolent lymphoma cells can become damaged over time to cause the cells to grow more rapidly, like the cells seen in aggressive lymphoma. Generally, not all of the lymphoma cells will transform, so the lymphoma will most likely have a combination of both indolent and aggressive cells.

Not all indolent lymphomas will transform, there is no definite way of knowing who will transform into a more aggressive type. There is nothing that you can do (or have done) to prevent transformation from happening. Treatment for indolent lymphoma (eg. Chemotherapy, antibody therapy or radiotherapy) have not shown to increase or decrease the incidence of lymphoma to transform.

Transformation can occur at any time, with an average of 3-6 years from diagnosis. It can also occur many years later, although

# FACT SHEET

becomes very uncommon after 15 years after diagnosis. The risk is very low, where only 1-3% of those with follicular lymphoma will transform each year.

## HOW TO KNOW IF LYMPHOMA HAS TRANSFORMED

If you have an indolent lymphoma and you develop new symptoms, your medical team will want to find out if your lymphoma has relapsed or if it has transformed. Transformation might be detected if there is a change in your symptoms, such as:

- A rapid increase in the size of your lymph nodes
- Rapid swelling of your liver or your spleen
- Weight loss, sweats or fevers (these are known as 'B symptoms')
- Blood tests (elevated lactate dehydrogenase (LDH) or calcium)

It is important that a biopsy of a lymph node, bone marrow or another affected tissue is done to show large fast-growing lymphoma cells. Transformation can happen in some areas of your lymphoma but not in others, so you might have a PET/CT scan to find out where the most likely site of transformation is located.

## TREATMENT OPTIONS FOR TRANSFORMED LYMPHOMA

Your treatment will depend on:

- What treatments you have had in the past for your indolent lymphoma (if any)
- How well your lymphoma responded to past treatments
- Your general health

A transformed lymphoma needs to be treated in the same way as aggressive lymphoma. Treatment can include:

- Combination chemotherapy
- Autologous stem cell transplant (if healthy enough)
- Radiotherapy (usually with chemotherapy)
- CAR T-cell therapy (after 2 prior therapies) soon available in Australia. Until then, the government funded medical overseas program (MTOp).

## CLINICAL TRIALS

Clinical trials are essential in identifying effective medicines and determining optimal doses of these medicines for people diagnosed with lymphoma. People who are interested in participating in a clinical trial can find one using the following methods:

- Speak to their specialist to see what options are available
- See '[Understanding Clinical Trials](#)' fact sheet

## FOLLOW UP

Once treatment is completed, people with lymphoma need to be followed up by their specialist with regular appointments to monitor:

- Evaluate the effectiveness of the treatment
- Ongoing treatment side effects
- Recovery from treatment
- Signs of lymphoma relapsing
- Potential late effects caused by treatment that can occur months or years later, that can be based on the duration and frequency of treatment, age, gender and overall health of each person

## RESOURCES AND SUPPORT

Organisation	How can they help?
Lymphoma Australia	<ul style="list-style-type: none"><li>• Lymphoma Australia offers a wide variety of resources and support for people with lymphoma or CLL and their carers. Visit <a href="http://lymphoma.org.au">lymphoma.org.au</a> for further information:</li><li>• Lymphoma Australia Fact sheets &amp; booklets including:<ul style="list-style-type: none"><li>• Other lymphoma subtypes</li><li>• Understanding Clinical Trials</li><li>• Relapsed or refractory lymphoma</li></ul></li><li>• <a href="http://lymphoma.org.au/page/1218/fact-sheets">lymphoma.org.au/page/1218/fact-sheets</a></li><li>• Lymphoma Australia YouTube Channel: Presentations on a variety of topics about lymphoma subtypes and management. <a href="http://youtube.com/user/LymphomaAustralia">youtube.com/user/LymphomaAustralia</a></li><li>• Lymphoma Nurse Support Line: 1800 953 081 or email: <a href="mailto:nurse@lymphoma.org.au">nurse@lymphoma.org.au</a></li><li>• Online private Facebook group: '<b>Lymphoma Down Under</b>' <a href="http://bit.ly/2mrPA1k">http://bit.ly/2mrPA1k</a></li></ul>

## SOME QUESTIONS TO ASK YOUR DOCTOR

- If you think my lymphoma has transformed, will you do another tissue biopsy to confirm this?
- What treatment options are available for my transformed lymphoma?
- Are there any treatment options that are better but are yet to be funded by the PBS in Australia?
- Are there any clinical trials currently available to me?

This resource was last reviewed and updated February 2020.