ANTHONY NOLAN saving the lives of people with blood cancer

HAVING A DONOR LYMPHOCYTE INFUSION (DLI)

WHAT'S IN THIS FACTSHEET?

This is a very brief guide to a type of treatment you may receive after your stem cell transplant. We've provided some information here about what a DLI is, why you might need one and the possible side effects. There's also information about where you can get support and further information if you need it.

WHAT IS A DLI?

The immune system is made up of different types of white blood cells (WBC) called lymphocytes – these cells fight infections. A DLI is the infusion of lymphocytes, specifically T-cells, from your donor. T-cells are lymphocytes that can cause an immune response. A DLI is given after a sibling or unrelated donor stem cell transplant.

WHEN IS A DLI USED?

There are two main reasons for having a DLI:

Mixed chimerism

After a stem cell transplant, chimerism will be measured on a regular basis. Your chimerism (how much of your bone marrow is from your donor) should be as near to 100% as possible. If it's consistently low or drops, it means there is a risk of relapse or graft failure (when your donor's cells fail to develop and grow properly). A DLI causes an immune response which pushes the chimerism back up to an acceptable level.

It's important to remember:

- Not all patients will have 100% donor chimerism and that's fine if it's stable.
- Your chimerism will be checked regularly before the decision to have a DLI is made.
- A drop in chimerism doesn't mean you have relapsed.

Relapse

Relapse after a stem cell transplant can be treated with a DLI. If the relapse is low level and picked up early in a test for minimal residual disease (MRD), the immune response caused by a DLI can fight the disease and help put you into remission. If there is a higher level of disease at relapse, chemotherapy will be used first followed by a DLI to help put you into remission.

It's important to remember:

- A DLI after relapse is not always possible.
- Disease relapse can occur with or without a drop in chimerism.

In some cases, if a disease has a higher risk of relapse after transplant, a DLI can be pre-planned and given after transplant. This might be done as an extra preventative measure, even if you're not experiencing mixed chimerism or relapse. This will be discussed with you before the transplant.

HOW IS A DLI COLLECTED?

When the donor's stem cells are collected, if there are enough cells, a DLI can be removed, frozen and stored. If all the cells had to be used for the transplant, your donor or sibling will be asked to donate again.

A DLI is easier to collect than stem cells, injections are not needed as high levels of lymphocytes are always present in the blood and can be easily collected. However, the donor will still need to agree and have a medical first.

HOW IS A DLI GIVEN?

In most cases, the DLI can be given as an outpatient, but if chemotherapy is given beforehand the DLI will also be given while you're an inpatient. The DLI will be thawed and given to you through a syringe as it is given in much smaller volumes than stem cells. The DLI is normally given in increasing doses over a period of weeks or sometimes months, but this will be determined by your transplant team.

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WHAT ARE THE SIDE EFFECTS?

It's rare to experience side effects while receiving a DLI. Occasionally, there is a smell from the preservative which is added when the DLI is frozen. A nurse will be with you throughout the whole infusion and you will be observed for a short time after.

The main side effect is graft versus host disease (GvHD) and this can happen in the weeks following the infusion. Although a side effect, GvHD suggests the DLI has caused an immune response. The key is to balance GvHD so it gives the desired effect without the symptoms being unmanageable. Giving the DLI in increasing doses over a period of weeks helps control this risk.

It's important to remember:

- If you don't get GvHD, it doesn't mean the DLI hasn't worked - a response can be achieved without side effects.

RECOVERY

This will vary depending on the amount of GvHD. Follow up in clinics might increase initially to monitor for symptoms and response, and to decide if another DLI is needed. If the response is achieved and any GvHD resolved, recovery should continue as before.

WHY WOULDN'T A DLI BE GIVEN?

Every patient is different and the decision to give a DLI will be taken by you and the transplant team. These are just some reasons why a DLI wouldn't be suitable, but you should always discuss your options with your consultant.

A second transplant is the best treatment option

A second transplant will only be considered in the case of relapse or graft failure. There are several factors that will decide if it's the best option, such as the level of relapse/graft failure, time from transplant, age and fitness.

You have already had significant acute GvHD

If significant acute GvHD develops, your donor's cells from the stem cell transplant have caused an immune response. However if your chimerism still drops or relapse occurs, giving a DLI to cause more GvHD is unlikely to work. If you have low levels of acute GvHD, a DLI could still be an option, but you should discuss it with your transplant team

You're having treatment for chronic GvHD

Giving a DLI during treatment for chronic GvHD can cause acute GvHD or make symptoms worse. If GvHD is already present, it's unlikely that a DLI would work.

Where can I get more information and support?

If you or a loved one are affected by a stem cell or bone marrow transplant, there are many ways we can support you.

Find information

Our website has lots of helpful information about what it's like to go through a transplant. Download or order our booklets for free, and find links to other places where you can get support at: **anthonynolan.org/patientinfo**

Need to talk?

The Patient Services team at Anthony Nolan are here for you.
Call us on **0303 303 0303** or email **patientinfo@anthonynolan.org**

Get connected

Find support from other patients and their families by joining our patient and families forum at: **anthonynolan.org/forum**

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If you have any questions or comments about this resource, or would like information on the evidence used to produce it, please email: **patientinfo@anthonynolan.org**

The information contained in this factsheet is correct at the time of being published (July 2019). We plan to review this publication within three years. For updates or the latest information, visit **anthonynolan.org**

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