

THYROID CANCER ALLIANCE

Multikinase inhibitors (MKIs): Information for patients with advanced medullary thyroid cancer

If your doctor has told you that your treatment has not worked or has stopped working, you may want to know what this means for you and what treatment options may be available for you.

In the last few years, **targeted biological therapies** have emerged as promising new treatments for different types of cancer. These therapies aim to block cancer cells by interfering with specific molecules in these cells that make them grow and divide, while doing little damage to normal cells. Traditional chemotherapy aims to stop the growth of cancer cells by blocking all rapidly dividing cells, thus causing more damage to normal cells.

Multikinase inhibitors (MKIs) are a type of targeted therapy. They inhibit (block) chemical messengers called tyrosine kinases or multikinases in cancer cells. Blocking these messengers stops the cells from growing and dividing. They are used in the treatment of advanced thyroid cancer as well as other types of cancer such as liver and kidney cancer.

MKI drugs will not cure your cancer, but they may stop the cancer from progressing

further for months, even years, and give you a significant trouble-free period. However, this needs to be balanced against the possible side effects. Treatment with an MKI is not always appropriate; it will depend on a number of factors including any other medical conditions you may have and how well you feel. Some patients may show no progression for years or have excellent quality of life with no symptoms at all; they might just require regular monitoring with blood tests and scans. In other cases, additional surgery or radiotherapy may be an option before considering an MKI. It is important therefore to start the treatment after a multidisciplinary discussion and weighing the options.

Your doctor may also talk to you about any available clinical trials that may be suitable for your situation.

There are several MKIs that have been approved for treating advanced differentiated



thyroid cancer and/or advanced metastatic medullary cancer by the Food and Drug Administration (USA) and European Medicines Agency (EMA). These are:

- Sorafenib (Nexavar)
- Lenvatinib (Lenvima)
- Cabozantinib (Cometriq)
- Vandetanib (Caprelsa)

Cabozantinib and vandetanib have been approved for use in treating advanced medullary thyroid cancer.

Not all MKI drugs are available in every country. Each country has its own regulatory process that a new drug has to go through once it has been FDA/EMA-approved.

There are other MKIs that are going through clinical trials.

If your doctor suggests that you start taking an MKI, don't hesitate to ask what the treatment involves and what it may involve for you. It is important that you think about the quality of life you want to have and talk with your clinical team about your own preferences.

How to take your MKI medication

All of the available MKI drugs are in the form of tablets that you can take in your own home. It is important to get the advice of your clinical team about how to take your tablets and when. Please also read the manufacturer's patient information leaflet (PIL). Do not hesitate to ask if there is anything that is not clear to you..

It is important that you inform your doctor about ALL your medications. Certain drugs that you might be taking for other conditions may cause a significant interaction with vandetanib and increase its toxicity.

Coping with side effects

It is important to discuss the possible side effects with your doctor beforehand and agree a plan on how to manage these. Knowing in advance what side effects might occur and how they can be managed is half the battle.

Not everyone experiences these side effects to the same degree; some people may have very few side effects if at all.

If the side effects become troublesome, talk with your doctor about the alternatives. These might involve changing to another drug, stopping the drug for a while and then restarting (a drug 'holiday'), lowering the dose or stopping the treatment completely.

Make sure that you have a list of contact telephone numbers or email addresses for your clinical team and that you know who to contact if you are experiencing side effects and you want advice.

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SIDE EFFECT

WHAT CAN BE DONE

Constipation	Your doctor can prescribe laxatives. Constipation can also be helped by eating plenty of fibre (grains, fruits and vegetables), drinking plenty of water and taking gentle exercise.
Diarrhea	If you have loose bowel movements or your existing diarrhoea gets worse, contact your clinical team, as it is important to prevent dehydration and loss of electrolytes. They can prescribe medication for you. It is important to drink plenty of water.
Fatigue	If you feel tired, it is important to try and pace yourself. Get as much rest as you need and try to balance this with gentle exercise such as walking, bicycling or swimming. Your bloods and thyroid function tests also need checking regularly.
Hair thinning	Some temporary hair loss may occur but it is unlikely you will lose all your hair. Contact your clinical team if you think it is getting worse.
Hand/foot skin reaction	The palms of your hands and the soles of your feet may become red, dry or itchy. It is important that you alert your clinical team as soon as possible. They can advise you about creams and lotions that may help and prevent the situation from getting worse. If you develop severe symptoms or blisters talk to your doctor immediately. Benign skin conditions and skin cancers can also develop rarely.
Hoarseness of voice	Some people may develop a hoarse voice.
Hypertension (high blood pressure)	Your blood pressure will be measured regularly. If you develop hypertension, your doctor may prescribe an antihypertensive drug.



Side effect

What can be done

Muscle, joint or bone pain

If you experience muscle, joint or bone pain, ask your clinical team for a prescription for a suitable painkiller.

Nausea (feeling sick)

You may feel nauseous at the beginning of your treatment, but this should only last a few days. Your doctor can prescribe an anti-emetic (anti-sickness) drug.

Sore mouth

It is recommended to practice good dental hygiene. If however you develop a sore mouth or ulcers, your clinical team can prescribe mouthwashes and medicine to prevent or treat infections.

Heart problems

Vandetanib can have an effect on the heart in a small proportion of cases and regular ECG monitoring is required. Your doctor will advise you and alter the dose if needed.

Neurological problems and eye changes

Very rarely vandetanib can also cause neurological problems and eye changes. Your doctor will advise you and alter the dose if needed.

Copies of the patient leaflets are available in English, French, German and Spanish on request from:

Thyroid Cancer Alliance
PO Box 359 | Diss, Norfolk
IP22 2NX
United Kingdom

Leaflets are also available online:

www.thyroidcanceralliance.org
www.thyroidcancerpatientinfo.org

Voluntary donations to help with printing and postage are welcome. Please contact **info@thyroidcanceralliance.org**

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This information is prepared by the Thyroid Cancer Alliance, which is an international network of national thyroid cancer patient support organisations working together to provide support and information to those affected by the disease throughout the world. It is an outcome of a patient-led workshop on 'TKIs and what this means to patients,' which was held in Paris, October 2014. Please note, this information does not replace the information provided by your doctor. Always ask your clinical team if there is anything that is not clear to you.

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www.thyroidcanceralliance.org

