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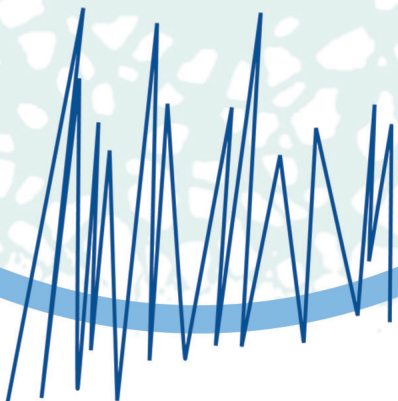
Perioperative lung cancer treatment

A patient's guide



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What is a "perioperative" cancer treatment?

"Perioperative" means any treatment given before and after the surgery for your cancer. The surgeon you have seen is hoping to perform an operation to remove your cancer. We know that for some people, giving this medication in addition to their operation can lead to better outcomes after surgery, which is why we are discussing this with you.

Why am I being offered perioperative treatment?

When someone is newly diagnosed with lung cancer, a meeting takes place between a group of doctors and specialist nurses to discuss the best treatment for you. This group, called the multi-disciplinary team (MDT) will include a surgeon and an oncologist (cancer doctor). This treatment is being discussed with you as they feel you may benefit from it.

Recent research has shown that for some patients, having perioperative treatment around the time of surgery increases the chance of cure, when compared to having surgery alone.

Guidelines suggest that we should consider perioperative treatment for anyone whose lung cancer is bigger than 4cm, or has spread to nearby lymph nodes, but is still suitable for an operation (stage 2 or stage 3A disease).

We know that perioperative treatment reduces the chance of the cancer coming back after the operation, and can also increase life expectancy. It does this through killing any tumour cells that may have spread through the bloodstream to other places, which are too small to see on CT scans (micrometastases).

Treating these before the operation reduces the chances of them causing problems later on. Some patients may also be offered further treatment after their operation.

Your oncologist will review you after your operation and discuss whether this is appropriate for you.

What treatment is given?

Prior to the operation, you will be treated with three drugs. Two of these drugs will be chemotherapy drugs, and one of these drugs will be an immunotherapy. We sometimes call this treatment "chemo-immunotherapy".

These drugs are prescribed by an oncologist. Before starting treatment you will see an oncologist to check this is the right treatment for you and answer any questions you may have. This treatment may be given at a different hospital to where you will have your operation.

These drugs are all given through a drip, as an outpatient, once every three weeks. You will have up to 4 treatments, each with all 3 drugs over a 12 week period. Each treatment will take around half a day to give through the drip. Before every dose you will be reviewed to check how you are feeling and do a blood test to ensure it is safe to go ahead.

After you have had 4 doses of treatment, you will have another CT scan to see whether the cancer has shrunk or changed in size. As long as the doctors who reviewed your case before you had your chemoimmunotherapy still feel that your cancer can be removed, your operation will go ahead as planned. Your surgeon will probably talk to you again before the operation, but further tests should not be necessary.

What chemotherapy is used?

The chemotherapy offered will depend on which type of lung cancer you have. Chemotherapy works by destroying rapidly growing cancer cells. If you have squamous cell lung cancer, we normally use carboplatin and paclitaxel. If you have adenocarcinoma, we normally use carboplatin and pemetrexed. There may be occasions where other chemotherapies are used (these include cisplatin,

vinorelbine and gemcitabine) – your treating team will discuss this with you if this is the case. Please see the chemotherapy patient information leaflet for further information about this treatment.

What immunotherapy is used?

The immunotherapy drug used is called pembrolizumab. Immunotherapy works by boosting the immune system to help the body find and destroy the cancer cells. Please see the pembrolizumab patient information leaflet for further details about this treatment.

Is there anybody who should not have perioperative treatment?

Perioperative treatment has not been tested in patients whose lung cancers are smaller than 4cm and do not appear to involve the lymph nodes (stage 1), so it is not recommended for these patients.

If the cancer has spread in such a way that an operation is not possible, perioperative treatment is not recommended and an alternative treatment will be suggested.

Perioperative treatment should not be given to patients if their cancer has specific mutations in the DNA coding for particular genes (called EGFR and ALK) as it is not likely to be beneficial. This DNA test can sometimes take a little while to come back – your medical team will discuss this with you if it is required.

Sometimes other medical conditions that you already have mean that perioperative treatment is not right for you. Your oncologist will assess this fully at your appointment.

If I have perioperative treatment when will I have my operation?

Surgery would normally happen 3-4 months after starting the drug treatment. We would normally aim to perform the operation within 20 weeks of starting the chemo-immunotherapy.

Does delaying my surgery to have this treatment affect my chances of being able to have an operation?

Research has shown that the vast majority of patients who have chemoimmunotherapy first will go on to have surgery. This treatment is extremely effective for the majority of patients, both for shrinking the cancer down and reducing the chance of it returning.

A small number of patients (around 1 in 5) will not go on to have an operation, either because the cancer does not respond to the treatment, or because of a complication of the treatment. If this happens to you, your treatment team will discuss other options.

Do I have to have perioperative treatment?

No. If you and your doctors decide this treatment isn't right for you, you may be able to go straight to surgery or have alternative treatments such as radiotherapy, with or without, chemotherapy.

Will I need to have any more treatment after my surgery?

Depending on how your cancer has responded to the drug treatment given before the operation, some patients may be offered further immunotherapy by itself. Your oncologist will discuss this with you after the operation. After you have completed treatment, you will be followed up with regular clinical review and imaging to monitor how you are getting on.

Reference: Perioperative pembrolizumab for early-stage non–small-cell lung cancer. Wakelee et al. N Engl J Med 2023;389:491-503.

Example of a perioperative treatment pathway:

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