

Health Professional Care Plan Information

Treatment of Small Cell Lung Cancer at The Christie

Prophylactic Cranial Irradiation (PCI)

Introduction

This information is for health care professionals involved in the care of patients receiving at The Christie NHS Foundation Trust under the care of the Lung Cancer Disease Group, for small cell lung cancer.

Brief description of the treatment

Prophylactic cranial irradiation (PCI) is offered to some patients with SCLC after a response to chemotherapy. It is contraindicated in patients with epilepsy, established cerebro-vascular disease, and/or poor performance status. PCI consists of 2 phases; treatment planning and treatment delivery. Treatment planning requires the patient to have a radiotherapy planning CT scan. At this visit, a mask will be made from a thin sheet of plastic, warmed in a water bath, which is then moulded around the patients head whilst lying supine on the treatment couch. This ensures accurate treatment delivery. Treatment delivery takes place once daily on consecutive weekdays, over one (5 sessions, or fractions), or two (10 fractions) weeks. The patient is reviewed by a clinician on a weekly basis during treatment delivery in the radiotherapy clinic.

Mechanism of action

Radiotherapy leads to ionisation reactions in tissue. This results in a series of reactions which results in DNA damage to both tumour and normal tissue. Irreparable damage leads to cell death, resulting in regression of any microscopic tumour cells that might be present, but also side effects from treatment.

Anticipated benefits

This is a prophylactic treatment which aims to reduce the risk of the patient developing brain metastases. However, patients are informed that unfortunately brain metastases will sometimes still develop after radiotherapy.

Success rate

Patients who have responded to chemotherapy for limited-stage disease have a 60% actuarial risk of developing brain metastasis within 2 to 3 years after starting treatment. This risk can be decreased by 50% by the administration of PCI, and overall survival improved by 5%

Filename	PCI HCP Information Sheet
Last modified	7-Jul-15
Page	1 of 3

PCI following a response to chemotherapy in extensive-stage disease can significantly reduce the rate of brain metastases at 1-year (14.6% versus 40.4%, $p < 0.05$) and improve survival at 1-year (27.1% vs 13.3%, $p = 0.03$).

Risks and side effects

Side effects from radiotherapy are considered acute (occurring during radiotherapy and for up to 3 months after, and are usually reversible) and late effects (long term, irreversible damage from radiotherapy). The main acute side-effects for this treatment are: complete alopecia, skin reaction on scalp, nausea, headaches, and lethargy/fatigue. Late effects are uncommon. Evidence is conflicting as to whether PCI can lead to long-term cognitive impairment.

24 hour medical helpline: The Christie Hotline 0161 446 3658

Detailed description of care plan

Initial investigations

Patients will have undergone a restaging CT scan after their chemotherapy and proceed to PCI if it demonstrates a response. The patient will have a radiotherapy planning CT scan before starting PCI. At that appointment a shell will be made from a thin sheet of plastic warmed in a water-bath, which moulds around the patient's head and clips to the treatment couch.

Description of treatment

Radiotherapy delivered once daily, weekdays, either 5 fractions over 1 week or 10 fractions over 2 weeks. Each fraction requires patient to lie supine with arms resting by their sides, wearing the shell for 10-15 minutes. PCI may be given at the same time to radiotherapy to the chest or other sites of metastases.

Supportive medications (administered as required)

Nausea, headaches, and fatigue: dexamethasone will usually be prescribed by the oncologist to take for 1-2 weeks during treatment.

Radiation dermatitis: E45 cream/1% hydrocortisone cream

Planned investigations

It is not possible to determine the effectiveness of treatment with PCI radiologically so no post-treatment brain scans are planned. Patients will continue their usual surveillance for their lung cancer.

Alternative treatments

Other treatment options include active surveillance or consideration of clinical trials.

Responsibilities – who does what

The hospital team

The Consultant team at The Christie will be responsible for supervising the oncologic care of the patient. This will include planning, approving and prescribing the radiotherapy, prescribing supportive care medication, and arranging tests and scans as required. The treatment radiographers and medical physicists will be responsible for planning and delivering the radiotherapy treatment

GP and Community palliative care support

Management of the community aspects of care remain the responsibility of the GP. Lung cancer patients are likely to have poor performance status, troublesome symptoms, and emotional needs; this is in addition to any co-morbidities that exist prior to a cancer diagnosis. Patients with advanced disease may have a life expectancy is less than 12 months therefore it is appropriate to add your patient to the GP practice Gold Standards Framework End of Life/Palliative Care Register. We encourage patients with advanced disease to accept referral to district and Macmillan nurse services early in their disease journey so they are known to palliative care services as and when their needs increase.

You will receive regular letters of update regarding your patient's progress.

Other specialist teams

If your patient is also under the care of other hospital teams they should continue to attend their appointments unless otherwise advised.