

Palliative radiotherapy guidelines

These guidelines should be read in conjunction with the appropriate site specific chapter as for some tumour sites there are specific recommendations. The following is generic information which is applicable to many but not all palliative situations.

1. Brain metastases

This is a diverse group; consideration must be given to the following:

- Single or multiple metastases
- Performance status
- Histology of disease (and options for systemic therapy)
- Control of disease outside the CNS

1.1 Single metastases

In those with a single cerebral metastasis, good performance status and control of disease outside the CNS consider neurosurgery or stereotactic radio-surgery. Otherwise use WBRT as below.

Referral to the neuro-oncology MDT at UHB meeting should be considered for these patients

1.2 Multiple metastases

For patients with a good performance status WBRT is indicated with 20 Gy in 5 fractions (there is no evidence that 30Gy in 10 fractions is superior).

For patients with a poor performance status radiotherapy may be inappropriate, if however radiotherapy is deemed appropriate use 12 Gy in 2 fractions.

1.2.1 Radiotherapy techniques

Clinical mark up (250 kV)

Simulation

CT simulation

Immobilisation

Orfit shell (not if clinical markup), head band or sand bags

Treatment volume

CTV = Whole brain

PTV = CTV + 1 cm

Practically this is defined by 'Reids' base line - supra-orbital ridge to tragus or external auditory meatus.

Normal field size 15 x 20 cm (ensure complete coverage of skull to avoid patchy hair loss)

Normal separation 15 cm (required for clinical mark up).

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Treatment technique

- Beam energy 6, 8 MV photons (or 250 kV)
- Supine
- Neck straight
- Head rest
- Lateral opposed fields
- Prescribed to MPD
- RCR category 3

1.2.2 Supportive care

- Dexamethasone (ensure reducing dose after completion)
- Anticonvulsants if required

1.2.3 Retreatment

Patients who relapse after WBRT and who had a good clinical, symptomatic and radiological response to their initial treatment and who are expected to have a reasonable survival can be retreated:

20 Gy in 10 # over two weeks.

2. Base of skull metastases

Treatment of the base of skull may be required for metastases at the base of skull or carcinomatous meningitis causing multiple cranial nerve palsies.

- Dose 20 Gy in 5# over 1 week
- Parallel opposed fields
- Prescribed to MPD
- Typical field size 15x6 cm

3. Bone Metastases

Radiotherapy treatment of bone metastases may be indicated in the following situations:

- Localised bone pain
- Spinal cord compression (see emergency radiotherapy section)
- Post operative treatment (e.g. following pathological fracture fixation or prophylactic pinning of a high risk lesion).
- Diffuse bone pain (see below)

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3.1 Impending pathological fracture

Certain patients with bone metastases are a high risk of pathological fracture. Early identification and prophylactic orthopaedic intervention is important.

The following features merit orthopaedic referral:

- >50% cortical erosion
- >3cm maximum diameter
- Axial skeletal involvement >3cm
- Multifocal lytic disease

3.2 Localised bone pain

A single fraction of radiotherapy for localised bone pain gives a symptomatic response rate in the region of 70-80%, up to 1/3 of patients may benefit from retreatment if no symptomatic response has been observed by 4-6 weeks.

Single 8 Gy fractions have been shown to be as effective as longer schedules

3.2.1 Principles:

Choose fields that allow subsequent matching of adjacent fields.

Minimise toxicity by using shielding where appropriate e.g. small bowel

If systemic chemotherapy may be used in the future minimise marrow irradiation.

Localisation by clinical markup of the painful area may occasionally be suitable eg for rib or spinal treatments

Spine

Upper C spine 2 lat opposed fields

Lower C spine and T spine single posterior prescribed to depth or for T spine AP opposed (2:1 weighting)

L spine AP opposed (2:1 weighting) or single posterior prescribed to depth

Ribs 250 kV applied or electrons

Long bones - 6-8 MV photons AP opposed fields prescribed to the MPD.

3.3 Diffuse bone pain

- Optimise analgesics according to the WHO pain ladder and involve the Macmillan community team.
- Consider bisphosphonates (especially metastatic prostate, breast and myeloma).
- Consider radioisotope treatment with strontium or samarium (prostate).
- Consider systemic chemotherapy.
- Wide field hemi-body irradiation

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3.4 Hemibody Irradiation

This has largely been superseded by isotope treatments due to side effects (tiredness, nausea and vomiting, hair loss, dry mouth and taste disturbance and marrow toxicity and pneumonitis at 6-8 weeks) but may occasionally be useful for patients with a short life expectancy and diffuse bone pain. Single fraction treatments are as effective as multi-fraction treatments.

Upper or lower hemi-body treatment

Extended FSD technique if field size above 40 X 40 cm

Tattoos on iliac crests for matching if required

8-10 MV photons

Delay treatment of other hemi-body by 4-6 weeks (to allow for marrow recovery)

Upper hemi-body 6 Gy to MPD

Vertex or clavicles to ASIS

Shield oral cavity

Lower hemi-body 8 Gy to MPD

Supportive care:

Antiemetics (5HT3)

Sedation

Blood transfusion

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