This document was published on 27 March 2020. Please check www.rcr.ac.uk/cancer-treatment-documents to ensure you have the latest version. This document is the collaborative work of oncologists and their teams, and is not a formal RCR guideline or consensus statement.

Neuro-oncology treatment guidance during COVID-19 pandemic

This guidance was developed by a wide group from the neuro-oncology community across the UK, including Guy's and St. Thomas', Cambridge, UCLH, Imperial, Bart's and others. Dr. Matt Williams (Imperial) is not the author, but is responsible for this document.

Given the current COVID pandemic, we need to think about how we manage our neuro-oncology patients. The focus, as ever, is on providing a safe, compassionate service, which is effective as possible. However, we have to accept that in the presence of a viral pandemic, risks and benefits from treatments may change, and therefore treatment options and advice should change as well. There is also a clear need to review patients remotely (telephone/ video conference), and on staff being able to work remotely.

It is likely that there will be significant issues with capacity, due to both bed and staffing issues. We would therefore suggest that decisions about treating patients during the COVID pandemic will be made through the CNS MDT. It is good practice to record what might be done during normal situations and during the COVID pandemic, in order to provide a clearer audit trail.

Key suggestions

1. Consultants should move to telephone clinics/ cancel/ delay patients from all OP clinics where possible
2. Neurosurgeons need to review operating lists for the next 12 weeks
3. Patients should not attend clinics in person unless essential
4. Ensure you have access to current NHS guidance on prioritisation, and that is shared across specialities
5. Prioritisation is dynamic; this requires on-going review of current capacity
6. Neuro-oncology is complex, cross-speciality discipline; therefore capacity needs to be considered across neurosurgery, oncology, radiology and pathology. It needs to include consideration of multiple staff groups, including doctors, nurses, phelobotomists, radiographers and chemotherapy nurses
7. We will have a prioritisation list: we will use this to guide decision-making, based on current resources and risks. All decisions about prioritisation will be made by the CNS MDT.

Brain tumour surgery

- Low Grade Gliomas and meningiomas which are purely elective need to be postponed.
- Patients with high grade brain tumours and other pathologies with significant mass effect/neurological deficit need to be reviewed on an individual basis re appropriateness of surgery.
    - This will in part be influenced by whether adjuvant treatment will be given. It is important to realise that in the absence of available ITU beds, neurosurgical options may be limited.

Patient prioritisation

These are likely to be difficult discussions, and should be discussed within the MDT. It is important to be clear that we may issue both "standard" advice and "COVID context" advice, and will need to be clear on the difference between the two. Discussions with patients and families should normally be conducted by consultants, and clearly documented.

Highest priority:	Large benign tumours with acute symptoms (pressure, loss of sight); posterior fossa tumours (malignant or non-malignant) causing life-threatening hydrocephalus
High – intermediate:	Medulloblastoma; Grade 3 glioma in young patients
Intermediate:	High-grade glioma in young fit patients
Low:	Small benign tumours; HGG in elderly, low grade glioma

Key points

- The entire neuro-oncology pathway is heavily dependent on neurosurgery, and we accept that neurosurgical capacity will fall, however, extent of resection plays a role in prognosis and decision making
- There remain a small number of patients with benign disease and a good long-term prognosis who will present with life/ sight threatening disease, and will require urgent surgery.
- Age plays a significant factor in treatment response and prognosis, and therefore in decision-making
- For common adult brain tumours, chemotherapy plays a small role, and mostly falls into category 5 & 6 in the NHSE prioritisation schedule.
- The risks of COVID-19 (and chemotherapy) rise with age
- Most adult brain tumour patients will not qualify for ITU
- There is a difference between risk (which is clearly higher with COVID-19 present) and priority (which is based on capacity, and is therefore variable)
- Hypofractionation reduces demand on the department, and also exposes patients to less risk. The neuro-oncology community has considerable experience with hypo-fractionated regimens (40Gy/15# and 30Gy/6#).

Based on all the above points, the following suggestions for treatment in the context of COVD-19 are made:

Disease-based considerations:

Glioblastoma multiforme

Age > 65: Consider no treatment, particularly if poor performance status.

Age < 65: Treat if good performance status (i.e. 0-1).
Surgery can be performed if sufficient capacity, but don't require a biopsy to treat. Treat with radiotherapy alone; consider hypofractionated regimes where possible. Review adjuvant chemotherapy in MGMT-methylated patients only on an individual basis.
Consider treating without tissue if imaging looks like a GBM.

Grade 3 glioma

1p19q co-deleted (anaplastic oligodendroglioma):	Consider delay to both radiotherapy and chemotherapy for 4-6 months. Consider CCNU single agent at 80% dose instead of PCV.
Non-co-deleted (anaplastic astrocytoma):	Deliver RT and delay chemotherapy 4-6 months. Consider post RT imaging at 3 months

Brain metastases

Consider alternative treatment to neurosurgery (e.g. stereotactic radiosurgery, VMAT)

Lymphoma

Only biopsy if well enough for aggressive treatment as per MATRIX trial [1]; otherwise consider WBRT based on imaging criteria

Chemotherapy

Primary chemotherapy

With our patients falling into the group 5/6 prioritisation categories and considering the risk: benefit ratio, consider suspending or not initiating chemotherapy, either concomitant or adjuvant. Age, performance status and MGMT methylation status should all be taken into account when making these decisions.

Exceptions to omission of chemotherapy would be in young patients with Grade 3 gliomas with a good resection where there may be a significant survival benefit; and occasional rare tumours such as NGGCT.

Chemotherapy for recurrent Glioma:

First recurrence:	Consider single agent lomustine or temozolomide according to individual patient and prior treatment characteristics. Counsel as to increased risk of COVID-19 infection (with respect to age and co-morbidity etc) versus the likely benefit of second line chemotherapy.
Second/subsequent recurrence:	Do not offer chemotherapy in view of balance of risk and minimal beneficial effect.

Radiotherapy

Continue ongoing radiotherapy where able.
Consider hypofractionated regimes:

- 40Gy/15# or
- 30Gy/6#

according to individual patient factors including age, prognosis from brain tumour, risk of COVID-19 infection and co-morbidity.

General considerations:

- Conversations with patients should now explicitly include:
    1. The risks of any treatment are higher in the context of COVID-19
    2. The likelihood of benefit of intubation/ventilation in ITU for COVID-19 related respiratory compromise is minimal in the context of a malignant tumour and, leading on from this,
    3. Expected prognosis and documentation of treatment escalation plan and DNAR status in case of deterioration in clinical condition
    4. Limited access to imaging to guide treatment decisions
    5. Limited ability to provide chemotherapy, based on reduced capacity
- For patients already on treatment, re- discuss appropriateness of continuing any RT and chemo with the changing risk, and document change in plan.

The conversations we are having to have with patients and relatives are very stressful and distressing whether face to face or by telephone. Looking after each other as a team is hugely important in this rapidly changing situation.

References

1. Ferreri AJM, Cwynarski K, Pulczynski E et al. *Chemoimmunotherapy with methotrexate, cytarabine, thiotepa, and rituximab (MATRix regimen) in patients with primary CNS lymphoma: results of the fi rst randomisation of the International Extranodal Lymphoma Study Group-32 (IELSG32) phase 2 trial.* Lancet Haematol 2016; 3: e217–27. https://www.thelancet.com/action/showPdf?pii=S2352-3026%2816%2900036-3