Neuro-oncology Prioritisation and Continuity Planning – for COVID-19 17.3.2020 -SJJ

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. Therefore, decisions about not treating patients during the COVID pandemic will be made through the CNS MDT.

Summary of Actions & Changes:

1. Consultants should move to telephone clinics/ cancel/ delay patients from all OP clinics for 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. Staff should ensure that they have remote access to EPIC and PACS
5. 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**

New brain tumour referrals made to the on-call neurosurgical SpR:
For those patients who are acutely unwell: case and imaging will be reviewed and d/w the on-call neurosurgical consultant in the first instance. The advice for emergency brain tumour cases will follow the pathway for acute neurosurgical referrals.

CNS MDT Operation:
We are limiting the MDT attendance and will consider moving to a remote model.
In this meeting we will review new cases, and on an individual patient basis a management plan re. intervention and/or clinic attendance will be given. Patients with known pathology will be discussed in the remote MDT and decisions documented.

Brain tumour surgery:
All theatre lists need to be reviewed by the relevant consultant to assess whether patients should undergo an operation as scheduled. 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, and through the CNS MDT, with a decision made regarding whether to proceed with 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.

Highest: 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

Neuro-oncology outpatient clinic:
All clinic lists will be reviewed and where possible patients telephoned. We aim to minimise the number of patients that need a clinic appointment, and there should be a minimum of 30 mins slots, with no over-booking, to reduce crowding. Any telephone discussion needs to be carefully documented on EPIC, a letter dictated, and appropriate follow up arrangements made (request repeat imaging and next review).

Brain tumour oncology:
The risks and benefits of radiotherapy and chemotherapy are different in the presence of COVID. Treatment decisions are therefore different but should be documented in context to the CP CNS protocol.

Radiotherapy Protocols for Glioma and COVID 19 context adjustments:

Glioblastoma (grade IV)		Expected prognosis	Adjustments for COVID-19
Age <70,PS 0-1, KPS 70-100	60Gy in 30 daily # over 6 weeks using with concurrent temozolomide 75mg/m^2 daily seven days a week during RT then 6-12 cycles of adjuvant temozolomide at 150-200mg/m^2 given 5 days in every 28 **MGMT+and MGMT-**	26.5% 2 year survival RT + TMZ vs 10.4% RT Alone 9.8% 5 year survival Median OS 14.6 months (RT +TMZ) vs 12.1 months (RT alone) MGMT+ve – 2 year survival MGMT –ve – 2 year survival 13.8% MGMT+ve Median OS 23.4 months RT + TMZ vs 15.3 months RT alone MGMT-ve Median OS 12.6 vs 11.8 months RT alone HR for Chemotherapy is 0.6 irrespective of MGMT status	60Gy in 30# and concomitant TMZ for patients < 60 optimum PS and MGMT +ve MGMT –ve 40Gy in15 # without temozolomide
Age >70 PS 0-1, KPS 70-100	40Gy in 15 # over 3 weeks **MGMT+ve** with current temozolomide 75mg/m^2 daily seven days a week during RT then 6-12 cycles of adjuvant temozolomide at 150-200mg/m^2 given 5 days in every 28 Can also consider treatment with temozolomide if MGMT+ve and > 70 **MGMT-ve** No temozolomide	Median Overall Survival 9.3 months RT + TMZ 7.6 months RT MGMT methylated – median OS 13.5 months MGMT –ve – median OS 7.9 months	40Gy in 15# RT only - as addition of chemotherapy outweighed by confounding risk of age from COVID 19 infection
Age <70, PS 2 or > KPS 50-60 Age >70, PS 2 or KPS 50-60	40Gy in 15 # over 3 weeks **MGMT+and MGMT-** No temozolomide	~ 6 months	30 Gy in 6# (Parallel opposed pair)or BSC
Any Age KPS <50	No treatment	~ 3 months	BSC

Grade III		Expected prognosis	Adjustments for COVID-19
1p19q co-deleted (anaplastic oligodendroglioma)	50.4 or 54Gy in 28-30# over 6 weeks. Followed by up to 6 cycles adjuvant PCV	Median OS 14.7 years (7.3 years RT only)	Consider delay to both RT and chemotherapy for 4-6 months. Consider imaging at 3 months
Non-codeleted (anaplastic astrocytoma)	59.4Gy in 33 # Then up to 12 cycles of adjuvant temozolomide at 150-200mg/m^2 given 5 days in every 28	OS @ 5 years 55.9% - RT + adj TMZ OS @ 5 years 44.1% - RT only	Deliver RT and delay chemotherapy 4-6 months Consider post RT imaging at 3 months

Grade II		Adjustments for COVID-19

1p19q co-deleted oligodendroglioma)	50.4 or 54Gy in 28-30# over 6 weeks. Followed by up to 6 cycles adjuvant PCV	offer radiological surveillance where monitoring is reasonable
Non-codeleted (astrocytoma)	50.4 or 54Gy in 28-30# Followed by up to 6 cycles adjuvant PCV	If IDH mutated offer radiological surveillance* unless adverse clinical or imaging features

*The 1608-EORTC-BTG study - Wait or Treat – will recruit patients histologically WHO grade II (diffuse) or III (anaplastic) astrocytoma, IDHmt without 1p/19q co-deletion without a need for immediate post-operative treatment.

Benign Tumours		Adjustments for COVID-19
Pituitary/glomus /VS/Meningioma	Consider in Skull Base MDT /CNS MDT	Defer treatment for 4-6 months

Chemotherapy Protocols for recurrent Glioma and COVID 19 context adjustments:

1. First/second recurrence – either single agent lomustine or temozolomide as per patient and prior treatment. Counsel as to risk of COVID-19 infection (age, co-morbidity etc) versus benefit of chemotherapy.
2. No third line treatment with carboplatin in the current context and low response rate and infection risk related to hospital visits and myelosuppression.