

# CNS Cancer

# CNS Gliomas

## CNS Tumor Grading:

### GRADE I:

Slow growing  
Often cured with surgery alone

### GRADE II:

Slow growing  
Unlikely cured with surgery alone

### GRADE III:

Rapidly growing  
Unlikely cured with surgery alone

### GRADE IV:

Most aggressive

## Glioma Types:

Glioma = derived from glial cell

### Oligodendroma

- Often grade II-III
- Notable mutations: IDH <sup>better prognosis</sup>, 1p/19q co-deletion <sup>better prognosis</sup>
- Histology: “fried egg” appearance
- Imaging: Bright on flair, no contrast enhancement

### Astrocytoma

- Often grade II-III
- Notable mutations: IDH <sup>better prognosis</sup>, ATRX
- Types: Low-grade (Grade I), diffuse (Grade II), anaplastic (Grade III)

### Glioblastoma

- Always grade IV
- Notable mutations: IDH <sup>better prognosis</sup>, MGMT methylation <sup>better prognosis</sup>
- Histology: Necrosis, high mitotic activity, vascular proliferation
- Imaging: “butterfly” pattern; ring enhancement, necrosis

# CNS Gliomas

Grade I

Surgery

Grade II/III

**Surgery +/- Adjuvant ChemoRT**

\* low risk grade II tumors can observe if total resection (age <40, total resection)

**ChemoRT**

**1. PCV (P) Procarbazine  
(C) Lomustine  
(V) Vincristine**

**2. Temozolomide (TMZ)**

\* *PCV preferred if IDH or 1p/19q*

# CNS Gliomas

Grade IV

**TMZ + RT**

*\* Surgery preferred, but usually not resectable*

**Other/if POD:**

**1. TTF “tumor treating field”**

EM field disrupts mitosis

**2. Bevacizumab**

Improves PFS not OS

Good for edema, RT necrosis

# CNS Tumors: Other

## Meningioma

### General

- Non-malignant
- Arise from dura of brain/spinal cord
- Imaging: dural tail “lightbulb” sign

### Treatment:

- Observe if small (<3 cm)
- Surgical resection
- Consider adjuvant RT

## CNS Lymphoma

### General

- NHL, usually DLBCL
- Risk: HIV, EBV, post-transplant
- Histology: CD20+, BCL6+, MUM1+ (activated non-GC)
- Imaging: Homogenous contrast enhancement

### Work Up:

- Check VL
- MRI brain/total spine
- Ophthalmology slit-lamp exam
- LP

### Treatment:

- HD MTX (minimum 3.5 g/m<sup>2</sup>) contraindicated in CKD
- R-MPV (Rituximab, MTX, Procarbazine, Vincristine)
- Steroids
- RT

# **CNS Cancer Reference Handout**

## CNS Gliomas

**Glioma Types:** [Glioma = derived from glial cell]

### Oligodendroma

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Notable mutations: IDH better prognosis, 1p/19q co-deletion better prognosis

Histology: "fried egg" appearance

Imaging: Bright on flair, no contrast enhancement

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Types: Low-grade (Grade I), diffuse (Grade II), anaplastic (Grade III)

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Most aggressive

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Surgery

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1. PCV (P) Procarbazine  
(C) Lomustine  
(V) Vincristine

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### Grade IV

TMZ + RT

**Other/if POD:**

**Surgery preferred:**  
usually unresectable

1. TTF "tumor treating field"  
2. Bevacizumab

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Arise from dura brain/spinal cord

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Steroids

RT