High Grade Glioma

Types	Genetics
Anaplastic Astrocytoma	1p/19q: Characteristic of oligodendroglioma
Anaplastic oligodendroglioma	ATRX: Characteristic of astrocytoma
Anaplastic oligoastrocytoma	IDH: Improved prognosis
Radiology:	$CIMP^{codel} > CIMP^{Non\ COD} > CIMP^{Neg}$
T1 hypointense	1p19q must be IDH Mutant
Heterogeneous enhancement	

Chemo therapy

PCV (lomustine, procarbazine, vincristine)

Can consider TMZ per Stupp

MOA: Lomustine - alkylating, procarbazine - alkylating, vincristine - microtubule inhibition

RT

Typically 59.4 Gy/33 fx

Volumes

GTV = Resection cavity + enhancement

CTV1 = GTV + 1 (59.4 Gy)

CTV2 = GTV + 2 cm (45 Gy)

Literature

NOA-04: 60 Gy vs PCV/TMZ → Crossover @ toxicity or progression
No difference in TTF, PFS, OS. Identified IDH, $CIMP^{CODEL}$ as positive prognostic factors.

RTOG 9402: PCV x4 → 59.4 Gy vs 59.4 Gy
Neoadjuvant PCV improved OS + PFS in 1p19q codel.
No OS benefit in non-codel. 79% of RT Alone eventually got chemo. Benefit apparently only in IDH mutant

EORTC 26951: 59.4 Gy + PCV x6 vs 59.4 Gy
Improved OS + PFS with chemo. More benefit w/ codeletion.

CATNON: RT vs RT + conc TMZ vs RT + adj TMZ vs RT + adj + conc TMZ
Adjuvant TMZ improves OS + PFS in IDH mutant.
No benefit to concurrent.

CODEL: Initially TMZ vs RT → PCV vs RT + TMZ.
Modified given that TMZ alone had worse PFS
Now RT + PCV vs RT + TMZ