Oncology Clinical Pathways
Glioblastoma

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Glioblastoma– Presumptive Conditions

VA automatically presumes that certain disabilities were caused by military service. This is because of the unique circumstances of a specific Veteran's military service. If a presumed condition is diagnosed in a Veteran within a certain group, they can be awarded disability compensation.

Atomic Veterans Exposed to Ionizing Radiation

- Brain cancer

Gulf War and Post 9/11 Veterans

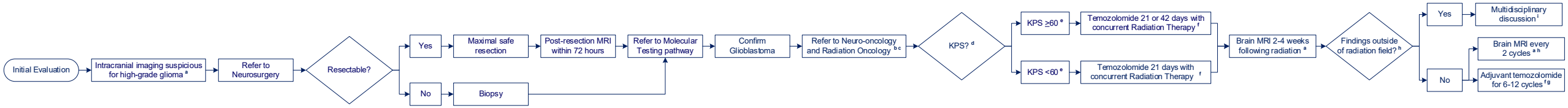
If the patient served on or after Sept. 11, 2001, in Afghanistan, Djibouti, Egypt, Jordan, Lebanon, Syria, Uzbekistan, or Yemen or if you served in the *Southwest Asia theater of operations, or Somalia, on or after Aug. 2, 1990, specific conditions include:

- Brain cancer
- Glioblastoma

* The Southwest Asia theater of operations refers to Iraq, Kuwait, Saudi Arabia, the neutral zone between Iraq and Saudi Arabia, Bahrain, Qatar, the United Arab Emirates, Oman, the Gulf of Aden, the Gulf of Oman, the Persian Gulf, the Arabian Sea, the Red Sea, and the airspace above these locations.

For more information, please visit U.S. Department of Veterans Affairs - Presumptive Disability Benefits (va.gov)

Glioblastoma– Initial Evaluation



Clinical trial(s) always considered on pathway. For assistance finding a clinical trial, email CancerClinicalTrialsNavigation@va.gov.

[a] **Imaging** MRI with and without contrast; CT with contrast if MRI contraindicated

[b] **Refer to Neuro-oncology** via National TeleOncology consult if local VA Neuro-oncology unavailable, and Palliative Care

[c] **Refer to Genetic Counseling** for patient with personal history of other primary cancers particularly if diagnosed ≤45 years, or first or second degree relative with cancer ≤55 years; clinician discretion for those >55 years

[d] **Prognostic** features including age, extent of resection, and MGMT promoter methylation status should be evaluated

[e] **MGMT-Methylation** status may guide use of temozolomide or radiotherapy alone

[f] **Temozolomide** prescribing concurrent with radiation therapy at a dose of 75 mg/m^2 per day for up to 42 days with weekly CBC with differential and metabolic panel to include liver function; beginning 4 weeks after the end of radiation, adjuvant temozolomide 150 mg/m^2 days 1-5 of a 28 day cycle (C1), if no myelosuppression increase dose to 200 mg/m^2 days 1-5 of a 28 day cycle for subsequent cycles up to C12 with a CBC between day 22 and day 28; ondansetron 8mg orally 30 minutes before each temozolomide dose; PJP prophylaxis recommended only during concurrent radiation therapy for patients on stable (not decreasing) doses of glucocorticoids or who have lymphopenia

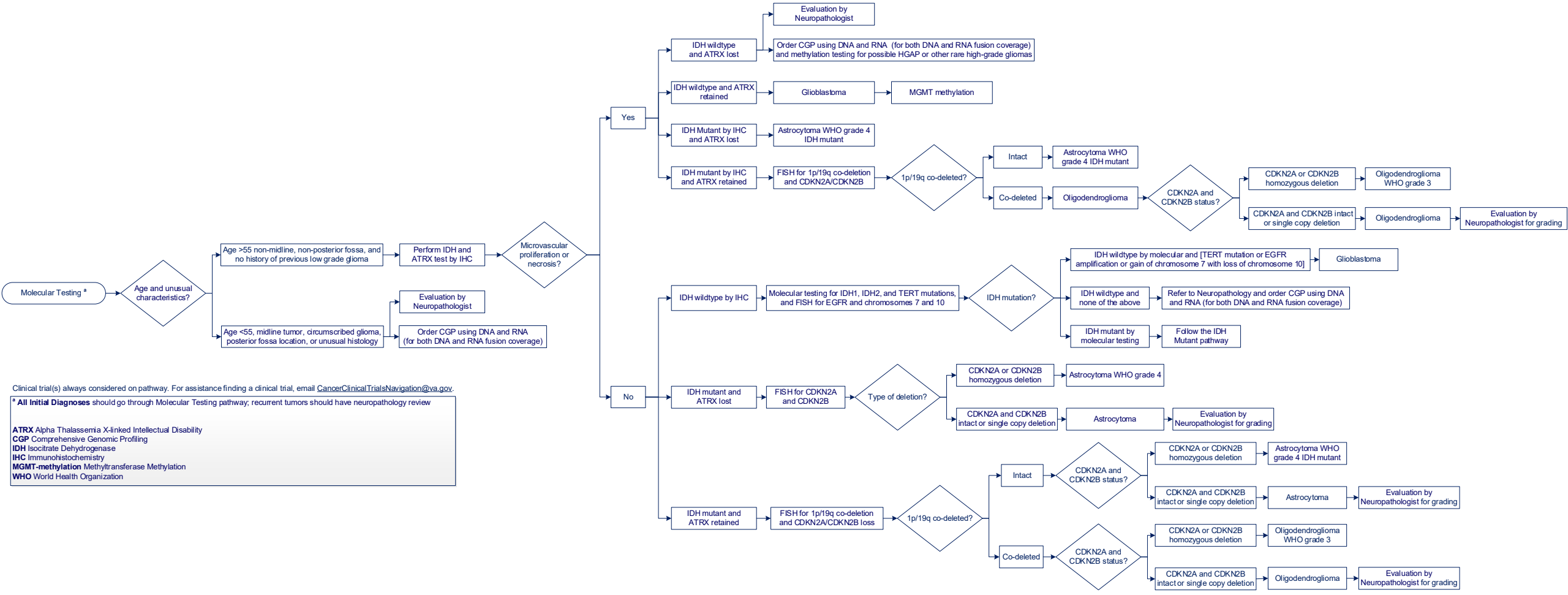
[g] **Adjuvant Temozolomide** with or without tumor treating fields (TTF) per patient preference

[h] **Pseudo Progression** can occur inside the radiation field (defined as within the 80% isodose line) up to 12 weeks post-radiation

[i] **Multidisciplinary Discussion** through local tumor board or National TeleOncology CNS Virtual Tumor Board; for patients with poor prognosis provide supportive care in lieu of chemotherapy and radiation

KPS Karnofsky Performance Status
MGMT Methylguanine Methyltransferase
PJP Pneumocystis Jiroveci Pneumonia

Glioblastoma– Molecular Testing



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[a] **All Initial Diagnoses** should go through Molecular Testing pathway; recurrent tumors should have neuropathology review

ATRX Alpha Thalassemia X-linked Intellectual Disability
CGP Comprehensive Genomic Profiling
IDH Isocitrate Dehydrogenase
IHC Immunohistochemistry
MGMT-methylation Methyltransferase Methylation
WHO World Health Organization

Glioblastoma– Molecular Testing Table

Eligibility	Test Category	Test Type	Recommended Vendors	NPOP Coverage	Specimen Type
Age > 55, Non-midline, Non-posterior fossa, AND No history of previous low grade glioma	IHC	IDH1 R132 mutation ATRX	Local VA or locally contracted vendor	No	Tumor Tissue
IDH-mutated	FISH	1p/19q FISH for codeletion CDKN2A/B homozygous loss	Local VA or locally contracted vendor	No	Tumor Tissue
IDH-wild type	Molecular	TERT promoter mutation testing	Local VA or locally contracted vendor	No	Tumor Tissue
	**FISH	EGFR for amplification Chromosomes 7 and 10 for gain 7/loss 10	Local VA or locally contracted vendor	No	Tumor Tissue
	**Microarray	Chromosomal microarray (aka Oncoscan FFPE)	Local VA or locally contracted vendor	No	Tumor Tissue
	Methylation Testing	MGMT promoter methylation testing	Local VA or locally contracted vendor	No	Tumor Tissue
Age < 55, Midline tumor, Circumscribed glioma, Posterior fossa location, Unusual histology, IDH-wildtype WITH loss of ATRX, OR IDH-wildtype WITHOUT glioblastoma-defining molecular alterations	Somatic NGS	DNA and RNA-based comprehensive genomic profiling (CGP)	Tempus	Yes	Tumor Tissue

* Testing should not be ordered indiscriminately on every case as it will inappropriately exhaust tissue. Instead, follow the pathological workup recommended on the Molecular Testing page for appropriate test utilization

** Choose FISH OR microarray. In most cases FISH can be done instead of microarray. If performing microarray, then FISH is not indicated.