2510. IDH1 Mutation is Associated with Post-Operative Symptom Improvement in Glioblastoma Multiforme

DISCLOSURES

- The authors have no disclosures to report
Isocitrate dehydrogenase is a protein most commonly involved in oxidative decarboxylation of isocitrate to alpha-ketoglutarate as part of the Krebs cycle.

In glioblastoma, the IDH mutation has been shown to confer better qualitative prognoses, including median overall survival and response to temozolomide.

However, the effect of IDH on post-operative tumor symptomatology has not been investigated deeply.
METHODS

- A retrospectively collected database of GBMs operated on at our institution between 2012-2019 was reviewed.
- Patient records were queried for presenting and pre-operative variables, operative variables, and follow up data.
- Data was analyzed using descriptive and bivariate analysis.
• 583 cases of GBM treated with resection were identified.

• Mean age was 61.41 (SD 12.79) and the sample was 62.1% male (363/583).

• IDH mutation status was assessed in 67.9% (396/583) of tumors, and 7.1% (28/396) of tumors analyzed were IDH mutated.
• Gross total resection was achieved in 70.6% of patients with resection level recorded and was not significantly associated with IDH mutation rate.

• 78.4% (403/514) of patients with recorded post-operative course received chemotherapy, of which 92.3% (372/403) received temozolomide.
RESULTS (cont.)

• IDH mutation status was not significantly associated with length of stay, peri-operative mortality, or readmission rates.

• It was significantly associated with abatement of presenting symptoms ($p = 0.003$, $OR = 4.48$, 95% CI = 1.51 - 13.25) and with lack of symptomatic deterioration ($p = 0.004$, $OR = 0.199$, 95% CI = 0.058 – 0.674) on latest follow up.

• IDH status was not significantly associated with recurrence rate ($p = 0.453$).
• The IDH mutation is currently used as a prognostic factor for post-operative improvement and to guide chemotherapy.

• IDH-mutated tumors respond much better to the standard of care (temozolomide + targeted radiotherapy).

• In our study, we have shown that the IDH mutation predicts symptom improvement in patients who receive resection for glioblastoma.

• IDH mutation status on post-operative analysis can help guide counseling and long-term follow up and should be routinely tested.

• In addition, knowledge of improved symptomatology can be a spurring factor for patients choosing surgery over supportive care for recurrent glioblastoma.
• The IDH1 mutation predicts symptomatic improvement in glioblastoma

• Assessment of IDH mutation status can offer increased opportunities for precision medicine and post-operative counseling

• Continued studies are required due to subjectivity of criteria