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Society For Neuro-Oncology Annual Meeting: Excitement Builds Around Immunotherapy

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1,400 Neuro-oncologists and other cancer researchers met November 17-20 in Anaheim CA, for the Annual Society of Neuro-oncology (SNO) meeting.

Few advances in improved treatments for brain cancers were presented. Here are some summaries on the conference which may provide insights into new developments in new treatments for brain cancers. Most promising approaches were in the area of immunotherapy/vaccines which had several standing room only sessions.

RTOG-0525 Trial

The standard of care today for Glioblastoma is Temodar Merck ([MRK](#)), which improves survival by 10 weeks over surgery and radiation. This trial comparing standard dose to dose-dense Temodar was presented and did not show improved efficacy, which was a blow to the field as a number of centers have been working on this trial for the last few years. The trial did confirm prospectively the significance of MGMT methylation in GBM (only MGMT methylated patients benefit from Temodar). Further analysis from this trial of molecular biomarkers showed prognostic value for several new biomarkers as a more precise predictor of outcome in GBM.

Immunotherapy

Based on the discussions with several neuro-oncologists at the conference, the most buzz in immunotherapy products is about Celldex's CDX-110 ([CLDX](#)) and ImmunoCellular Therapeutics' ICT-107 ([IMUC.OB](#)). Both companies had multiple presentations at the conference and presented in standing room only vaccine symposium.

Celldex - presented an update on ACTIII trial of the EGFRViii peptide vaccine. A median OS of 24.6 months was reported and greater than 30% survival at 3 years compared favorably to historical EGFRviii+ patients. A Phase III trial is just starting at 150 centers to treat 324 patients. There is some concern about the number of patients the company would have to screen to treat 324 patients as ACTIII data seems to indicate only 1 out of 8 patients who enrolled in the trial were eligible for the treatment.

Immunocellular Therapeutics – presented updated data from phase I trial showing median OS of 38.4 months and median PFS of 16.9 months. Three year survival was over 55% which is impressive compared to standard of care as well as other competing products in development. Company also presented data comparing ICT-107 vs a tumor lysate vaccine in a concurrent trial conducted with the same patient characteristics giving significant credibility to the data. ICT-107's improvements in survival was statistically significant compared to tumor lysate vaccine (38.4 months vs 20 months) even with such as small number of patients. Additional data presented showing significant decrease in cancer stem cell (CSC) levels and immune response further validates the mechanism of action as this is the only vaccine targeting CSCs which are now widely being regarded as roots of cancers.

Immune modulators - Several studies in mouse glioma models reported improved survival in animals treated with OX40L and anti-PD1 antibodies. Ipilimumab (anti-CTLA4 Ab, BMS ([BMY](#))) showed beneficial survival effects in patients with melanoma brain tumors. The IL4Ralpha was shown to be involved in immunosuppression in glioma and may be a useful target for therapies. A report from a trial using an intratumoral adenoviral-TK vector showed minimal improvement in survival.

One should expect to see follow-up trials of combination of these vaccines and immune modulators in the coming years, and they may further improve survival.

Cedars - A report pooling data from four Dendritic Cell trials at Cedars-Sinai showed favorable outcomes with DC compared to Avastin in recurrent patients. The ICT-107 trial was reported to have greatly improved survival in newly diagnosed patients with median OS of 38.4 months compared to other vaccine approaches.

CMV - One study correlated an intense immune response to CMV infection with better outcome in GBM while another presented evidence that infection of macrophages and microglial cells induces an immunosuppressive environment that facilitates growth of the tumor. Studies at Duke reported immune suppression from CMV infection in GBM and PFS of 27.4 months in patients treated with a CMV-DC vaccine in combination with anti-IL-2R antibody to delete Treg. This may be a new avenue for some of the companies to follow in the next few years.

Overall, although there was no major news breakthrough at SNO this year, the excitement around immunotherapy and potentially a successful vaccine product in the next few years was certainly a major theme. This could be a game changer as the cancer treatment paradigm is shifting away from chemotherapy to immunotherapy.

Disclosure: I have no positions in any stocks mentioned, and no plans to initiate any positions within the next 72 hours.

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