17th Annual Scientific Meeting of the Society for Neuro-Oncology

Stefan Oberndorfer

Department of Neurology, Landesklinikum St. Pölten-Lilienfeld, Austria

The 17th Annual Scientific Meeting of the Society for Neuro-Oncology (SNO) was held in Washington, DC, from November 15–18, 2012. The programme started with an education day followed by 3 days of scientific programme including more than 400 abstracts and 80 oral presentations covering the whole spectrum of neuro-oncological diseases from laboratory to clinical research. Interaction of multiple disciplines involved in neuro-oncology makes these meetings especially stimulating. This article provides a focused personal overview covering some of the presented data.

One of the highlights of SNO 2012 was the presentation of the AVAGLIO trial by Olivier Chinot. This randomized placebo-controlled phase-III trial in newly diagnosed glioblastoma compared concomitant standard treatment (radiotherapy and temozolomide [TMZ]) versus standard treatment with bevacizumab. Almost 900 patients were included. The trial was positive with respect to the primary endpoint (mPFS). One-year survival exhibited no difference between the 2 arms, and mOS is not available so far. Investigator-assessed mPFS was 6.2 months in the standard arm, 10.6 months in the bevacizumab arm, and 4.3 months in the standard arm versus 8.4 months in the bevacizumab arm rated by an independent radiological facility. Secondary endpoints, such as HRQoL measures, showed prolonged maintenance in multiple domains of HRQoL (motor function, social function etc) from 4 to approximately 7–8 months, a significant reduction of steroids, and longer conservation of better KPS with bevacizumab (BEV). It is also worthwhile to mention the low rate of intracranial bleedings in the bevacizumab arm (1.5 vs 0.7 % in the standard treatment arm) – a complication which could have been a major obstacle in the treatment with BEV.

Concerning glioblastoma treatment at recurrence, a retrospective study (n = 390) by Selfridge et al, University of California, Los Angeles, investigated whether treatment with bevacizumab at first, second, or third recurrence has any influence on outcome. Survival as well as mPFS after progression was similar in all 3 groups. These results suggest that deferred use of bevacizumab has no effect on its antitumour efficacy.

In another retrospective study from the UCLA, Nghiemphu et al confirmed earlier observations that re-challenge with temozolomide can be effective in a subgroup of patients with malignant glioma. They included 14 patients with glioblastoma receiving 12 cycles of adjuvant temozolomide. Patients had stable disease without tumour progression for a median of 23.2 months according to the RANO criteria. PFS(6) after re-challenge was 43 % and mOS 13.5 months, which is impressive data as compared to other glioblastoma studies at first relapse. As prior data indicated, this study confirms that the benefit from re-challenge with temozolomide increases the-longer-the-stable disease interval is. These confirmatory findings are helpful for a small subgroup of patients.

Also of great interest were the follow-up results of the 2 anaplastic oligodendroglial tumour trials EORTC 26951 and RTOG9402. Both studies showed a 2-fold increase in mOS survival in co-deleted (1p/19q) tumours treated initially with radiotherapy and adjuvant PCV chemotherapy versus radiotherapy alone followed by chemotherapy at recurrence. These data are generally commented on as practice-changing in the treatment of co-deleted anaplastic oligodendrogliomas. Further molecular analyses including IDH-1 mutation and gene expression profiling are under way in both studies in order to detect chemotherapy- or radiotherapy-sensitive subtypes.

An update on PFS and OS was provided for the RTOG 0131 phase-II trial investigating pre-irradiation and concurrent temozolomide therapy in newly diagnosed anaplastic oligodendrogliomas and mixed gliomas. Median follow-up was 7.4 years, and mPFS 5.9 years. Median OS has not been reached yet. 1p/19q co-deletion was detected in 23 patients, but mPFS and OS have not been reached so far in these patients. From PFS data at 3 and 6 years (82 % and 77 %, respectively), the authors concluded that results indicate comparable activity to RTOG 9402.

Several interesting immunological treatment approaches (20 abstracts from lab immunology research and 29 abstracts from clinical immunotherapy) were presented at the 2012 meeting. In a phase-II study from Spain (Valle RD et al), 31 patients received immunotherapy with autologous tumour lysate-pulsed dendritic cells for newly diagnosed GBM following ALA-guided resection. Vaccination was started prior to standard radiochemotherapy. They reported a significant survival benefit in the vaccination arm with a mOS of 27.4 months as compared to 14.7 months in the standard arm. Importantly, only patients with complete resection or a tumour load < 1 m^2 after resection were included in the study. Another phase-I/II trial by Duane Mitchell (Duke University) investigated whether targeting the CMV integument protein pp65 with pp65-RNA-transfected dendritic cells has any immunological effect or provides estimates on efficacy. There was a strong correlation of migration of dendritic cells to the vaccine site-draining lymph nodes with PFS and OS. This observation suggests that migration of dendritic cells might be an important biomarker for increasing efficacy of CMV vaccination strategies.

Preliminary data on the ERC-1671 Gliovac study (vaccination with autologous tumour cell lysate combined with heterologous components of different glioblastoma donors) in recurrent glioblastoma showed that mPFS (9.5 weeks) and mOS (17 weeks) might be superior as compared to other treatment after failure with bevacizumab. However, only 8 patients have been enrolled so far in this study.

Correspondence to:
Stefan Oberndorfer, MD
Department of Neurology
Landesklinikum St. Pölten-Lilienfeld
Propst-Führer-Straße 4, 3100 St. Pölten
Austria
e-mail: stefan.oberndorfer@stpoelten.lknoe.at