Expanding the spectrum of care for brain tumor patients

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This issue of *Neuro-Oncology Practice* highlights several current aspects of neuro-oncology practice that range from pediatric issues, the management of glioma patients, treatment-related infertility, and the integration of complementary and alternative medicine. These articles represent a wide spectrum of current issues that are highly relevant for physicians and allied health professionals who care for brain tumor patients.

Three articles address several pediatric issues in neuro-oncology. Nesvick et al provide a case-based comprehensive review of atypical teratoid/rhabdoid tumors. Although this is a rare tumor entity, through large-scale, multicenter interdisciplinary studies, the understanding of molecular pathogenesis has significantly advanced and clinical trials testing molecularly targeted strategies offer hope for an improved outcome.

It has long been known that conventional chemotherapy, in particular vinca alkaloids, can have severely damaging effects on the peripheral nervous system in patients with a prior history of neuropathy-prone medical conditions. The young patient presented by Kissoon and colleagues developed a severe neuropathy following the administration of vinca alkaloids. Charcot-Marie-Tooth disease (CMT) had not previously been diagnosed, and this report heightens the need for awareness that preexisting CMT is an important factor that increases the risk for chemotherapy-induced neuropathy. As the patient had concomitant radiotherapy, it can only be speculated whether the additional radiotherapy of the neuro-axis may also have had an influence on the severity of the neuropathy and in particular the findings of thickening of the nerve roots as demonstrated by MRI.

Patients with pediatric posterior fossa tumors (PFTs) can have lasting severe disability related to poor coordination, motor difficulties, and ataxia, and need intensive neuro-rehabilitation. Hartley et al evaluated the physical outcome of children between age 5 and 17 years following surgery (1–4 years) for PFT. Patients were assessed using the scale for the Assessment and Rating of Ataxia, the Brief Ataxia Rating Scale, and the mobility Pediatric Evaluation of Disability Inventory subscale to determine prevalence and severity of ataxia as a measure of physical function. A high proportion of children (age >1 year) following surgery for PFT have

persistent ataxia, highlighting the need for further research regarding rehabilitation management for this population.

Several articles addressed the management of adult patients with glioma. Promotor methylation of *O*-6-methylguanine-DNA methyl transferase is an important prognostic and predictive biomarker for glioblastoma. Dovek and Nguyen et al investigated whether the magnitude of the methylation score correlates with outcome in a series of 165 newly diagnosed glioblastoma patients. Their conclusion is that the *MGMT* unmethylated group contains a partially methylated group that shares a survival benefit similar to those of the methylated group. However, they were not able to demonstrate an association of very high methylation scores with increased survival, which will require additional confirmation.

Tumor-related epilepsy can be refractory to multiple antiepileptic drug treatments in approximately 30% of patients with oligodendroglioma. The study by Haggiagi and Avila evaluated the effect of temozolomide on seizure frequency in a homogeneous group of patients with WHO-grade oligodendrogliomas. The authors report that temozolomide therapy may result in reduced seizure frequency and permit discontinuation of antiepileptic drugs. It was noted that improved seizure control was observed irrespective of objective tumor response on MRI, emphasizing the importance of incorporating seizure control as another endpoint in assessing tumor-directed therapy.

Santos-Pinheiro et al reviewed the topic of seizure burden in low-grade glioma (LGG) patients pre- and postresection. In this retrospective study, the authors showed that seizure frequency following surgical resection of LGGs and the seizure frequency change between the 6-month preoperative and postoperative periods may serve as clinical predictors of early tumor recurrence. Further prospective studies are needed to validate these findings.

Understanding women's reproductive priorities and fertility issues are increasingly important topics as the survival and prognosis for brain tumor patients improve. The article by Stiner and colleagues suggests there is a lack of understanding of reproductive priorities and highlights the need for a comprehensive fertility discussion with the patient and

partner prior to beginning treatment. They also suggest that a referral to a reproductive specialist be considered, so patients may increase their understanding of the risks to their fertility and options to circumvent this risk.

It is not only the quality of research and best medical and surgical support for patients that is critical to the care of patients with brain tumors, but also the organization of the neurological quality services, as pointed out by Fernández-Méndez et al. Health-related quality of life (HRQoL) information is an important routine part of clinical assessments and helps to tailor patient care. The aim of the authors' project was to integrate routine collection of HRQoL information from patients with brain tumors or brain metastasis in 2 specialized United Kingdom tertiary centers. The main challenges were reluctance to change everyday practice and limited resources. Key measures for success included strong leadership of senior staff, involvement of stakeholders in project design and evaluation, and continuous strategic support for professionals.

How do patients and medical professionals see complementary and alternative medicine (CAM)? The article

by Eisele et al describes the situation in Switzerland, where the option of reimbursement of alternative care exists. Through the use of a survey, the authors report it is not uncommon for glioma patients, especially young patients, to pursue CAM treatments, and they do this for a number of reasons. The leading motivation for CAM use was to contribute actively to the treatment of the disease, and often this was without the advice or supervision by health care professionals. Cost and issues of reimbursement were not an important factor in the decision against or for CAM use. A list of different types of CAM is included and illustrates the diverse spectrum of approaches. Despite the lack of science-based parameters and robust level of evidence regarding the efficacy of CAM, there remains a need to better understand patients' attitudes toward their disease, to provide counseling, and to identify potential interactions of CAM with standard treatments for gliomas. The article can serve as a resource for patients who are interested in the use of CAM, and can assist in the counseling of patients and carers.