LETTER TO THE EDITOR
Radiation Therapy Reduces Local Failure and Improves Overall Survival in sPNET

To the Editor: We applaud the study by Fangusaro et al. [1] on the treatment of young patients with sPNET which continues to be a challenging disease requiring multi-disciplinary management. However, we fear that with the authors' focus on intensive chemotherapy and autologous transplant they have underestimated the curative value of radiation therapy in this disease. It is true that 12/20 survivors (60%) did not receive radiation therapy and, therefore, were spared the toxicity of this treatment. Unfortunately, 21/43 children enrolled on the trial died of progressive/recurrent disease, and only 8 of these received radiation. Therefore, more than 60% of patients who died did not receive a potentially curative treatment while another two patients (4.7%) died directly as a result of their intensive chemotherapy regimen. This seems a high price to pay in order to avoid the potential late toxicity of radiation therapy.

Previous studies support the benefit of radiation therapy in the treatment of sPNET. The German HIT-SKK87 and HIT-SKK92 trials examined a cohort of 29 patients (all <38 months), and the only factor on multivariate analysis that predicted overall and progression-free survival was the use of radiation therapy [2]. The Canadian pediatric brain tumor consortium reported on 49 patients where both chemotherapy and radiation therapy predicted survival, but again only the use of radiation was associated with increased survival on multivariate analysis [3].

In addition, when looking at the patterns of failure analysis for Head Start I and II, it appears that at minimum local radiation therapy to the site of the primary tumor would have made a significant difference. For instance in those with progressive/recurrent disease 17/25 (68%) experienced "local only" failure; 23/25 (92%) of all failures had a local component. This is in contrast to CCG-921, which included much less intensive chemotherapy in combination with local and cranial-spinal radiation, where the 5-year rate of "local only" failure was 22% and for any failure involving the primary site was 42% [4]. The importance of radiation treatment with any concern for residual disease left after surgical resection is a fact that was also born out by both the French [5] and German [6] infant medulloblastoma studies using chemotherapy alone. In these reports, following gross-total resection without evidence of metastases, there was impressive long-term event free and overall survival. However, if there was any residual or metastatic disease chemotherapy alone had significantly worse prognosis with EFS of <50% with residual disease and <20% with metastatic disease [5,6].

Certainly the use of any therapy with potential morbidity should be approached cautiously. However, given the clear benefit of radiation therapy and the fact that modern radiation treatment may be given in a fashion to decrease doses to normal tissues thus minimizing late sequalea of therapy [7–9], even in young children [7], we question the omission of this therapy from sPNET regimens, especially in those with any residual/metastatic disease or at the time of progression.

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