The proportion of children with medulloblastoma receiving deferred postoperative radiotherapy more than tripled in the USA from 2004 to 2012, according to new research. Benjamin Kann (Yale University School of Medicine, New Haven, CT, USA) and colleagues examined the records of 816 patients between 3 and 8 years of age drawn from the US National Cancer Database. The patients were diagnosed with medulloblastoma between 2004 and 2012 and had surgery and adjuvant chemotherapy. Those who were given radiotherapy at least 90 days after surgery were designated as having deferred postoperative radiotherapy.

Overall, 123 (15%) of 816 patients had deferred radiotherapy. The main factor in determining whether treatment was given upfront was the patient’s age. 50 (36·8%) of 136 3-year-olds had deferred radiotherapy, compared with five (4·1%) of 123 8-year-olds. In 2005, 8% of patients had deferred radiotherapy. By 2012, this had risen to 27%. Yet the investigators found that deferring radiotherapy was strongly associated with poorer overall survival (hazard ratio 1·95 [95% CI 1·15–3·31]).

Craniospinal radiotherapy is the type of radiotherapy necessary to treat medulloblastoma. If given to children younger than 3 years, it can have devastating effects, including severe learning difficulties. Clinicians therefore avoid prescribing radiotherapy for this patient population. Deferring radiotherapy for slightly older children might reflect legitimate concerns driving a decision to avoid radiotherapy or delay it until the patient is better able to tolerate it. “But there needs to be an understanding that deferring radiotherapy may be coming at the cost of decreased survival”, explained Kann.

“This paper underscores the fact if the decision is made to give a child radiotherapy, it should be given as soon as possible”, said Richard Gilbertson (University of Cambridge, Cambridge, UK). But he cautioned against over-interpreting the results. “Medulloblastoma is at least four different types of disease; some patients with particular forms may only need a reduced dose or even no radiotherapy”, explained Gilbertson, adding, “This study views medulloblastoma as a single entity; it should not be used to support a blanket statement about treating all types of medulloblastoma.”

Kann believes that the standard-of-care for paediatric medulloblastoma should remain upfront postoperative radiotherapy, but agreed that deferral is likely to be appropriate for certain subgroups.

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