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## **New strategy improves outcome for children with most common type of brain tumor**

Radiotherapy that is adapted for the severity of disease and followed by a shortened course of chemotherapy substantially improves the outcome of children with a type of brain tumour called medulloblastoma, claim investigators in a paper published online in *The Lancet Oncology*. "Not only can we now cure about 70% of children with high-risk medulloblastoma, we can also cure more than 80% of those with standard-risk disease with a shorter, and therefore more convenient, chemotherapy approach", notes author Dr Amar Gajjar from St Jude's Children's Research Hospital in Memphis, USA.

In their study, the researchers administered adjusted the doses of radiotherapy given to 134 children with medulloblastoma, depending on how severe their disease was. Children were classified as being either at standard risk if they had only small tumours remaining after surgery and no evidence that the disease had spread to the rest of the body, or at high risk if they had larger tumours, or evidence of spread to other organs. Children in the high risk group were given a higher dose of radiotherapy to the neck and spine than were those in the standard-risk group, but both groups received an additional boost of radiation to the actual site of the tumour, a shortened course of chemotherapy, and a reinfusion of bone-marrow stem cells after each cycle of chemotherapy.

Children with high-risk medulloblastoma have a 30–40% chance of surviving to 5 years, and chemotherapy usually lasts for about 12 months. By using their risk-adapted approach to radiotherapy, Dr Gajjar and colleagues were able to increase this survival rate to about 70%. Furthermore, "by reducing the amount of cisplatin from eight doses to four doses, and the amount of vincristine from 32 doses to just eight doses, we could alleviate a lot of the neurotoxicity associated with the higher dose of vincristine without reducing survival", explains Dr Gajjar.

Dr Gajjar predicts that these findings could be the start of some exciting advances in neuro-oncology. "Our research focused on understanding the biology of medulloblastoma", he says, "we now need to develop a biological system of staging that works in conjunction with the current clinical staging system to further refine treatment for this disease". Until then, however, "investigators should consider adopting a similar therapeutic strategy to ours for their high-risk patients. This approach should be feasible in most paediatric oncology units at academic medical centres, but meticulous staging and careful attention to detail during radiotherapy planning and treatment are essential to obtaining similar outcomes", he concludes.

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