

Carbon ion radiotherapy safe and effective for treating inoperable spinal tumors

August 12 2013

A new analysis has found that a type of radiation therapy called carbon ion radiotherapy can control cancer growth and prolong survival in patients with spinal tumors. Published early online in *Cancer*, a peer-reviewed journal of the American Cancer Society, the study indicates that the treatment is a promising alternative for patients whose spinal tumors cannot be surgically removed.

Surgery is the mainstay of treatment for spinal sarcomas; however the tumors are one of the most challenging diseases for [orthopedic surgeons](#). In addition, some patients are not candidates for surgery due to the location of the tumor and/or the patient's condition. In these cases, radiation therapy is generally used. Carbon ion radiotherapy is a type of radiation therapy that is known to be effective for treating various types of inoperable sarcomas, which are tumors that arise from connective tissue. Using carbon ions to target radiation to the tumor, the treatment is minimally invasive, has little effect on adjacent healthy tissues, and has the potential to preserve patients' quality of life.

To investigate the effectiveness and safety of carbon ion radiotherapy for inoperable spinal sarcomas, Reiko Imai, MD, PhD, of the Research Center Hospital for Charged Particle Therapy at the National Institute of Radiological Sciences in Japan, and her colleagues studied the outcomes of 47 patients who received the treatment between 1996 and 2011. In 79 percent of patients, tumor growth was controlled for at least five years. Also, 52 percent of patients survived for at least five years (with 48 percent of patients surviving that long without experiencing [cancer](#)

[progression](#)). None of the 15 patients with tumors that were smaller than 100 cm³ had a [cancer recurrence](#). No fatal toxicities occurred from the treatment, although one patient had a skin reaction, seven patients experienced vertebral compression salvaged by surgical intervention, and one developed a spinal cord reaction. Twenty-two of the 28 patients who were alive at the last follow-up appointment could walk without supportive devices.

"This report is the first one regarding spinal sarcomas treated with carbon ion radiotherapy, and our findings offer a treatment alternative to patients with inoperable tumors," said Dr. Imai.

More information: "Impact of Carbon Ion Radiotherapy for Primary Spinal Sarcoma." Keiji Matsumoto, Reiko Imai, Tadashi Kamada, Katsuya Maruyama, Hiroshi Tsuji, Hirohiko Tsujii, Yoshiyuki Shioyama, Hiroshi Honda, Kazuo Isu, and the Working Group for Bone and Soft Tissue Sarcomas. *Cancer*; Published Online: August 12, 2013
[DOI: 10.1002/cncr.28177](https://doi.org/10.1002/cncr.28177)

Provided by Wiley

Citation: Carbon ion radiotherapy safe and effective for treating inoperable spinal tumors (2013, August 12) retrieved 19 April 2024 from <https://medicalxpress.com/news/2013-08-carbon-ion-radiotherapy-safe-effective.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--