



Study Shows CyberKnife® System Provides Long-Lasting Pain Relief for Trigeminal Neuralgia Patients

CyberKnife Frameless Radiosurgery Offers a Precise and Non-Invasive Technique with Clinical Outcomes Similar to Gamma Knife Frame-Based Invasive Radiosurgery

SUNNYVALE, Calif., Jan. 29, 2018 /PRNewswire/ -- Accuray Incorporated (NASDAQ: [ARAY](#)) announced today that data from a study of 138 patients with trigeminal neuralgia (TN) showed stereotactic radiosurgery (SRS) delivered with the CyberKnife® System resulted in rapid and long-lasting pain relief, with minimal side effects. The study, titled "Image-Guided Robotic Radiosurgery for Trigeminal Neuralgia," was published in the December 2017 issue of the peer-reviewed journal *Neurosurgery* and provides robust clinical data supporting the efficacy and safety of the system for TN patients. It is the largest single-center study of TN patients treated with the CyberKnife technology reported to date.



CyberKnife(R) System

"This study is important because it reinforces that CyberKnife SRS provides unique benefits in the treatment of TN. Pain management goals were achieved and bothersome complications were rare even though a less invasive approach to delivering radiation was used," said Professor Pantaleo Romanelli, M.D., Centro

Diagnostico Italiano, Milan, Italy. "Importantly, we used a consistent treatment protocol for each patient that resulted in reproducible outcomes. This should provide confidence to other clinicians that they, too, can achieve similar clinical results."

TN is a disease often characterized by severe pain, with some patients describing it as the most atrocious pain human beings can suffer. Techniques like CyberKnife SRS may provide new hope for people living with this severe and challenging-to-treat medical condition.

Significant Pain Control

- Pain relief was achieved in 93.5 percent of patients after a median delay of three weeks after treatment
- Stable pain control was maintained by 76 percent of patients three years after the first treatment. The remainder of the patients attained pain control after a second treatment

Elimination of Pain Medication

- 78.9 percent of patients were completely pain- and medication-free within six months after treatment
- 93.5 percent of patients were able to decrease the dose of medications intended to control pain throughout follow-up and finally cease pain medication

Manageable Toxicity

- Overall, 18.1 percent of patients developed some sensory disturbance. Of these patients, 68 percent experienced the onset of complications after their second treatment; this is a typical side effect following re-irradiation

"The frameless CyberKnife Robotic Radiosurgery System delivers radiation beams from multiple unique angles (non-isocentric approach) with sub-millimeter accuracy. The reproducibility of the delivery technique resulted in excellent clinical outcomes for the patients with a non-invasive technique, unlike Gamma Knife. This study confirms the long lasting effect of one single fraction treatment delivered with the CyberKnife system," said Fabienne Hirigoyenberry-Lanson, PhD, Vice President Global Medical and Scientific Affairs, at Accuray. Importantly, the CyberKnife® technology's unique image guidance and automatic beam correction capability enabled the precise dose targeting necessary to treat TN. No head frame was required to obtain the pain control and side effect profile achieved with Gamma Knife, as reported in other studies.^{1,2}

About Trigeminal Neuralgia

Trigeminal neuralgia is a chronic pain disorder affecting the trigeminal or 5th cranial nerve. The condition requires long-term medical treatment which usually starts with medications to lessen

or block the pain signals sent to the brain. Over time some patients stop responding to medications or suffer from unpleasant side effects. For those patients, injections, surgery, or radiosurgery are alternative treatments.

About the Study

In this study, 138 patients with TN were treated with the CyberKnife System. A prescription dose of 60 Gy was delivered in a single fraction to a 6-mm segment of the nerve. The minimum and median follow-up was 36 and 52.4 months, respectively. All patients had taken medications for an average of 4.3 years before treatment with radiation. The primary study objective was to evaluate the safety and effectiveness of CyberKnife SRS in TN patients.

Important Safety Information

For Important Safety Information please refer to <http://www accuray.com/safety-statement>.

About Accuray

Accuray Incorporated (Nasdaq: [ARAY](#)) is a radiation oncology company that develops, manufactures and sells precise, innovative treatment solutions that set the standard of care with the aim of helping patients live longer, better lives. The company's leading-edge technologies deliver the full range of radiation therapy and radiosurgery treatments. For more information, please visit www accuray.com or follow us on [Facebook](#), [LinkedIn](#), [Twitter](#) and [YouTube](#).