

Cyberknife Radiosurgery for Psychiatric Disorders

Dr Lee Tae-Kyu

Tae-Kyu Lee, Kwan-Sung Lee, Shin-Soo Jeun, Yong-Kil Hong, Chun-Kun Park, Joon-Ki Kang, Byung-Ok Choi, Ihl-Bhong Choi, Yeong-Nam Kang

Objective: Stereotactic psychosurgery is known as one of effective means of treating in some medically intractable psychiatric disorders. The authors report Cyberknife Radiosurgery for patient with refractory major depression and Obsessive-Compulsive disorder(OCD)

Methods and Materials: Four patients underwent stereotactic psychosurgery for medically intractable psychiatric disorders. All were referred from psychiatrist of these disorders. One was major depression and three were Obsessive-Compulsive disorder(OCD)s. Subcaudate tractotomy was done for patient with major depression and ant cingulotomy was done for patients with OCD. Hamilton Depression scale(HAMD) was used for clinical improvement of depression and the results of OCD were evaluated with YBOCS(Yale Brown Obsessive Compulsive Scale) and VAS(Visual Analogue Scale). Computed Tomography(CT) was used in patient for localization of target. A thin-section CT scan (240 slices, thickness 1.0 mm) was made through the entire head, showing the anatomy of ventricle and corpus callosum. The CT images were networked to the Cyberknife workstation, where anterior portion of cingulum and subcaudate portion of white matter was outlined. The 80% isodose line was prescribed in a conformal fashion to a 7-mm diameter of the target. The lesions were made with cyberknife radiosurgery with LINAC.

Results: In one patient with depression, The HAMD declined from 28 to 6. Patient returned to previous social life. A signal change in target area was seen in T2-weighted images in MRI performed from 3 months after the treatment. The significant lesions were made with the volume of 0.94cm³ and the surrounding margin of low attenuation at 6 months. With follow up in three patients with OCDs, YBOCS of one patient during 3 months decline from 34 to 24 and clinical improvement was evaluated in two patients. T2-weighted images in MRI showed the signal changes in target areas at 3 months after the treatment. There was no operative mortality and no significant morbidity except one case of fatigue and malaise.

Conclusion: With these results authors assumed that cyberknife psychosurgery could be one of safe and effective therapeutic methods in several medically intractable psychiatric disorders