

**Background:** The purpose of this study is an investigation of the patient positioning accuracy (inter-fraction and intra-fraction shifts) for stereotactic radiation treatment of the brain lesions using invasive Leksell Coordinate Frame G<sup>®</sup> (LFG), non-invasive vacuum-activated head frame system HeadFix<sup>®</sup> (HF) and individual thermoplastic masks (TM), and comparison position errors of these systems.

**Method:** A total of 532 patients represented study population. LFG, HF and TM were used to immobilize patients during pre-radiation preparation and radiation treatment. Positioning accuracy was estimated using linac-mounted cone beam computer tomography (CBCT) scan system. The target intra-fraction offsets were determined by comparison target positions before and after the irradiation procedures with planning positions. To determine inter-fraction shifts data from daily CBCT scans were used. Statistical samples of target offsets in six coordinates were collected and statistical analysis was carried out.

**Results:** For 386 patients TMs were used, for 31 LFG and for others 115 HF. Analysis of inter-fraction shifts, based on scatterplots, showed no significant correlations and selected systematic errors in patient's positioning. Quantitative estimations of mean values and standard deviations also demonstrated acceptable accuracy. It was concluded that it's necessary to do daily CBCT control, if shifts at least in one direction are greater or close to 5 mm during first four procedures.

**Conclusion:** With respect to intra-fraction shifts, due to the slight differences of the offset error results, the choice between LFG and HF should be determined by the individual patient characteristics and does not affect on the accuracy of the delivered dose.

**Keywords:** Stereotactic radiotherapy, Leksell coordinate frame G<sup>®</sup>, HeadFix<sup>®</sup>, Positioning accuracy

#### EP-1077 [Miscellaneous » Others]

##### Neuroprotective Effect of EGCG Nanoparticles in Experimental Model of Cerebral Ischemia in Mice

Amitava Chakrabarti<sup>1</sup>, Harjeet Kaur<sup>1</sup>, Bishan Dass Radotra<sup>2</sup>, Bikash Medhi<sup>1</sup>

(1) Department of Pharmacology, Post Graduate Institute of Medical Education & Research, Chandigarh, India, (2) Department of Histopathology, Post Graduate Institute of Medical Education & Research, Chandigarh, India

**Background:** In the present study, the neuroprotective effect of nanoparticles of EGCG (Epigallocatechin Gallate: the active constituent of green tea extract) was examined in bilateral Common Carotid Artery Occlusion (BCCAO) model of stroke in mice during the sub acute phase.

**Method:** The study was performed in advanced small animal facility, PGIMER, Chandigarh, India after obtaining clearance from Institutional Animal Ethics Committee. The solid lipid nanoparticles (SLNs) of EGCG was developed indigenously in the laboratory. The study was performed in three divided groups of Swiss Albino Mice such as, Group 1 (Sham operated group), Group 2 (Saline treated Surgically operated group) and Group 3 (SLN-EGCG treated surgically operated group). After 14 days treatment period, behaviour study was done and animals were sacrificed. Several parameters were performed such as Brain infarct size, brain edema,

seizure susceptibility scores, reactive oxygen species, cytokines and immunohistochemistry of brain. The data was analyzed by one way ANOVA followed by post hoc Tukey's test. The p value less than 0.05 were considered as statistically significant.

**Results:** As compared to surgical treated group, EGCG nanoparticles treated group showed significant neuroprotection by ameliorating cerebral infarction, brain oedema, seizure score and improved neurobehavioral outcomes in sub-acute phase (14 days) of study. Nanoparticles of EGCG significantly attenuated the proinflammatory cytokines levels and prevented neuronal cell death.

**Conclusion:** These results revealed the neuroprotective potential of nanoparticles of EGCG in cerebral ischemia/reperfusion animal model of stroke during the sub acute phase.

**Keywords:** EGCG nanoparticles, Cerebral ischemia, Neuroprotection, Swiss Albino Mice

#### EP-1078 [Miscellaneous » Others]

##### Determination of Anxiety Level about Surgery in Patients with Low Back Pain on Preoperative Term

Ayşe Ünal<sup>1</sup>, Burak Eral<sup>2</sup>, Filiz Altuğ<sup>1</sup>

(1) Pamukkale University, School of Physical Therapy and Rehabilitation, Denizli, Turkey, (2) Pamukkale University, Department of Neurosurgery, Denizli, Turkey

**Aim:** To investigate preoperative pain intensity and anxiety level related to surgery in patients scheduled to lumbar surgery.

**Method:** One hundred and twenty six lumbar surgery scheduled patients (82 female, 44 male) due to various reasons were included in study. Patients' demographics and clinical data were documented and patients were asked whether they were worried about surgery. State-Trait Anxiety Inventory (STAI-I) was used to measure state-trait anxiety and Visual Analog Scale (VAS) was used to investigate pain intensity on preoperative term.

**Results:** The mean age of patients was 53.11±15.37 years. The mean pain intensity was 5.27±3.45. The mean STAI-I score was found 46.98±17.55 on preoperative term. Although 101(80.2%) of patients were informed about surgery, postoperative care etc., 25(19.8%) of patients were not informed, yet. While 60(47.6%) of patients had anxiety about surgery, 66(52.4%) had not. Ninety-six (76.2%) of patients stated their pain was constantly. Twenty-two (17.5%) of patients had pain, occasionally. Three (2.4%) patients had pain, rarely. There was a positive correlation between pain intensity and state-trait anxiety (p=0.047, r=0.177).

**Discussion:** Anxiety level of patients were high on preoperative term. It was observed that as pain intensity increases, state of anxiety also increases. We believe it is important that to be informed the patients about surgery is reduced anxiety, before surgery.

**Keywords:** Anxiety, Lumbar surgery, Pain intensity