Conclusions. The normalized total brain size was smaller in the schizophrenics in both sexes. However, the normalized cortical and white matter sizes were only smaller in females between groups. Therefore, there are sex dependent differences.

THERE ARE RELATIONS BETWEEN THE CLINICAL COGNITIVE TESTS AND SUBCORTICAL STRUCTURES OF THE BRAIN IN THE PARKINSON'S DISEASE PATIENTS WITH MILD COGNITIVE IMPAIRMENT: A BRAIN SEGMENTATION STUDY

Sahin B. [1], *Nahir M.* [2], *Akan G.* [3], *Hanoglu L.* [4]

[1] Department of Anatomy, Faculty of Medicine, Karabuk University, Karabuk, Turkey; [2] Department of Anatomy, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey; [3] Department of Radiology, Faculty of Medicine, Istanbul Medipol University, Istanbul; [4] Turkey Department of Neurology, Faculty of Medicine, Istanbul Medipol University, Istanbul, Turkey
bunyaminsahin@karabuk.edu.tr

Key words: *parkinson's disease, mild cognitive impairment, cognitive tests, magnetic resonance imaging, brain segmentation*

Background. The relation between the function and structure of the brain is under interest of the scientist. This relation gives information to the clinician to diagnose or monitor the neurodegenerative diseases. However, there are limited studies on clinical tests and structural analysis of the brain.

Aim. In the present study, we evaluated the correlation between the cognitive tests and size of the subcortical structures.

Material and Methods. 26 Parkinson's disease patients with mild cognitive impairment (7 females and 19 males) included to the study. The mean age of the patients (±SD) is 67.1±10.3 years. Cognitive tests were done in the clinic and the structural analysis of the subcortical structures were done on magnetic resonance (MR) images. Brain segmentation was done using the BrainSuite software. The correlation analysis is done between the cognitive tests and the size of the hippocampus, amygdala, caudate nucleus, putamen, globus pallidus and nucleus accumbens of the right hemisphere.

Results and Discussion. The size of the hippocampus, amygdala, caudate nucleus, putamen, globus pallidus and nucleus accumbens were 3770.2±483.1, 2874.2±506.7, 3007.0±1115.8, 5009.5±912.7 and 1876.9±327.4 cm^3 in the right hemisphere. The hippocampus was bigger in the patients who had high SBST learning mark (r=0.555; p=0.003). The amygdala was bigger in the patients who had high verbal memory learning score (r=0.420; p=0.03). There were positive correlations between size of the caudate nucleus and fruit&human (r=0.454; p=0.02), stroop error (r=0.457; p=0.02). There was also negative correlation between the nucleus accumbens and UPDRS (r=–0.446; p=0.02). There was not any correlation between the size of the globus pallidus and the cognitive tests.

Conclusions. Our findings revealed that there are strong correlations between the cognitive tests and the size of the subcortical structures. Our findings are also reveals that the above mentioned cognitive test could be accepted as powerful tests in clinic.

MORPHOLOGICAL STUDY OF CYTOTOXICITY OF LIGHTCURING NANOCOMPOSITE PARTICLES IN RAT MODEL

Saleeva G. T., Gimaletdinova A. M., Islamov R. R., Saleev R. A.

Kazan State Medical University, Kazan, Russia
albina.stm@yandex.ru

Key words: *dental filling material, Vitremer, Filtek Ultimate, nanoparticles, cytotoxicity, gum*

Aim. To study the cytotoxicity of glass-ionomer cement Vitremer (V), a nanocomposite for direct restorations of Filtek Ultimate (FU) and particles of the FU nanocomposite in an experiment on laboratory rats.

Material and Methods. Experimental rats in the precervical area of the first maxillary molar were provided with a cavity in which V glass-ionomer fillings, a FU glass nanocomposite for direct restorations or daily powdered FU nanocomposite powder were placed in the cavity. On the 14th day, the animals were removed from the experiment. For morphological studies, a gum site was taken from the animals adjacent to the prepared cavity and a gum site from the opposite side of the dentition and paraffin sections were made. For histological examination, the dewaxed sections were stained with hematoxylin and eosin.

Results and Discussion. For animals with fillings made of nanocomposite, as well as those which a powder was placed in the cavity of the tooth, significant changes in the structure of the gingival mucosa were revealed, the signs of hyperkeratosis and chronic inflammation are characteristic, and, in addition, the presence of cysts, both in the surface and basal layers of the epithelial layer.

Conclusions. Taking into account the negative influence of the nanocomposite particles on the gingival mucosa, we consider it advisable to limit the use of the test material to occlusal surfaces.

COMPUTED TOMOGRAPHIC ANATOMY OF THE MEDIASTINUM IN NORM, IN ESOPHAGEAL CANCER AND AFTER RESECTION OF THORACIC ESOPHAGUS WITH AUTOGASTROPLASTY

Samoilov P. V. [1, 2], *Rykov A. E.* [2]

[1] Orenburg State Medical university; [2] Orenburg regional clinical oncology dispensary, Orenburg, Russia
samojlov.peter@yandex.ru

Key words: *computer tomography anatomy, mediastinum, norm, esophagus cancer, resection, autogastroplasty*

Aim. Comparison of topographic and anatomical parameters of the mediastinum and its organs in norm and after resection of the thoracic esophagus with plastic gastric graft.