

of obese ones (average time 6.1 months, one month less compared to non-obese). During all the monitoring period, children of obese mothers had the highest weight-for-age, BMI-for-age, weight-for-length and length-for-age at the age of 18 months.

Conclusions. With an increasing BMI of mothers, duration of breastfeeding shortens and weight of the children increases. However, we found lean children in the group of obese mothers.

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THIRD-YEAR MEDICAL STUDENTS' ANATOMICAL SCIENCE KNOWLEDGE VS. CLERKSHIP DIRECTOR EXPECTATIONS

Rogers Kem A., Martin Charys M., Norris Madeleine E.

Department of Anatomy and Cell Biology, Schulich School of Medicine and Dentistry, The University of Western Ontario, London, Ontario Canada
Kem.Rogers@schulich.uwo.ca

Key words: competency-based medical education (CBME), anatomical science education, pre-clerkship curriculum

Background. Our school is implementing competency-based medical education (CBME) in undergraduate medical education (UME); however, the effectiveness of integration of anatomical sciences in this model is unknown. The anatomical knowledge that clerkship directors expect of students prior to clerkship is unclear, nor do we know if it is retained under the old curriculum.

Aim. The specific aims of this research are to: 1) determine which anatomical concepts are necessary for clerkship, and 2) assess clerkship students' anatomical knowledge prior to and at the end of each clerkship rotation.

Methodology. 1. Questionnaires were used as a guide during interviews with UME clerkship directors (family, internal, OB/GYN, surgery, paediatrics, psych.) to determine which anatomical concepts are necessary for each clerkship rotation. 2. Using Aim 1 results, assessments were created to measure students' anatomical knowledge prior to and at the completion of each clerkship rotation.

Results and Discussion. Embryology was the most, and histology the least, prevalent concept deemed necessary by directors. Gross anatomy was identified as a student strength by family and internal medicine; however, it was deemed a weakness in all other rotations. Only students entering internal, OB/GYN, paediatrics, and psychiatry rotations achieved a passing grade (>60%) on the pre-test, and only family med and paediatrics students demonstrated improvement in the post test.

Conclusions. Embryology was the most prevalent theme identified by clerkship directors as most specialties deal with development. Weaknesses included a lack of understanding of arterial branches, anatomical relationships, and MSK. Only paediatrics consistently improved between pre- and post-test scores, which may reflect more clerkship hours in the classroom.

NORMALIZED TOTAL BRAIN, CORTEX AND WHITE MATTER VOLUMES SHOW SEX DEPENDENT DIFFERENCES BETWEEN THE CONTROL SUBJECTS AND SCHIZOPHRENICS: A BRAIN SEGMENTATION STUDY

Sahin B.¹, Elfaki A. A. A.², Nahir M.³

¹ Department of Anatomy, Faculty of Medicine, Karabuk University, Karabuk, Turkey; ² Department of Anatomy, Faculty of Medicine, National University, Khartoum, Sudan; ³ Department of Anatomy, Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey
bunyaminsahin@karabuk.edu.tr

Key words: schizophrenics, normalized volume, sex differences, magnetic resonance imaging, brain segmentation

Background. The brain size of the brain varies depending on the body size of the normal subjects. Meanwhile, the size of the brain decreases in the schizophrenics. However, only volume comparison may not give realistic results unless they are normalized.

Aim. In the present study, we compared the normalized volume data between the controls and schizophrenics.

Material and Methods. 88 controls (37 females, 51 males) and 57 schizophrenic patients included to the study. Structural magnetic resonance imaging was performed and the DICOM images were analyzed using the FreeSurfer which is an automatic brain segmentation software. The total volumes of brain, cortex and white matter divided to the estimated total intracranial volume for the normalization of the data and results compared between the groups.

Results and Discussion. The normalized total brain fraction was smaller in schizophrenic females (72.86%) than that of control females (75.73%). But there was not differences for the normalized total brain fraction between the schizophrenic males (72.89%) and control males (74.17%, $p \geq 0.05$). The normalized cortical volume fraction was smaller in schizophrenics both for females and males (28.52 and 28.77%) than that of the control females and males (29.97%, 29.87%). The normalized white matter volume fraction was smaller in schizophrenic females (30.26%) than that of control females (31.47%). But there was not differences for the normalized total brain fraction between the schizophrenic males (29.50%) and control males (30.32%, $p \geq 0.05$).

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 (\pm 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 cm³ 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
samoilov.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.