Abstract

One of the most important subjects in the processing MR image is segmentation, especially extraction of the brain regions, which is part of the decision of urgent operation on brain. This type of medical operations need speed up process with maximum accuracy. In this study, brain is segmented by using k-means algorithm. A combination of global, adaptive thresholding techniques and at the next stage morphological operations was used for pre-processing. Moreover after these stage the main aim was setting out in the regional different of specified brain disorders to detect normality or abnormality. MRI neuroimages were used. The parameters were slices consisted of 1.5 mm thickness dual-echo fast spin echo data sets that are acquired through MRI scanners. The quality and robustness of the results of this study depend on the homogeneity of MRIs. Finally neuroimages were segmented to gray matter and white matter and volumetric measurements were calculated for whole brain and of these issue types.

References

- Ary JP, Klein SA, Fender DH. Location of sources of evoked scalp potentials:
- SCHUMANN, C., HAMSTRA, J., GOODLIN-JONES, B., LOTSPEICH, L., KWON, H.,
is enlarged in children but not adolescents with autism; the hippocampus is enlarged at all ages.
Gozden Gecirme. Journal, Turkish Psychiatry.
- COURCHESNE, E., KARNS, C., DAVIS, H., ZICCARDI, R., CARPER, R., TIGUE, Z.,
- SPARKS, B., FriedERMAN, S., SHAW, D., AYLWARD, E., ECHELARD, D., ARTRU, A.
premature arrest of growth. Mental Retardation and Developmental Disabilities Research
Reviews, 10(2):106–111.
and white brain tissue volume in adolescents and adults with autism. Biological Psychiatry,
- LINGURARU, M., VERCAUTEREN, T., REYES-AguIRRE, M., BALLESTER, M., and
AYACHE, N., 2007. SEGMENTATION PROPAGATION FROM DEFORMABLE ATLASES
FOR BRAIN MAPPING AND ANALYSIS.
- ABELL, F., KRAMS, M., ASHburner, J., PASSINGHAM, R., FRISTON, K.,
FRACKOWIAK, R., HAPP’E, F., FRITH, C., and FRITH, U., 1999. The neuroanatomy of
- McALONAN, G., DALY, E., KUMARI, V., CRITCHLEY, H., AMELSVOORT, T.,
SUCKLING, J., SIMMONS, A., SigmUNDSSON, T., GREENWOOD, K., RUSSELL, A., et
al., 2002. Brain anatomy and sensorimotor gating in Asperger’s syndrome. Brain,
125(7):1594.

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