



Innovations in the Field of Medical Imaging

Editorial Note

Imaging in Medicine Journal deals fundamental and translational research and applications focused on medical imaging, which seeks to reveal internal structures hidden by the skin and bones and also yields physical and biomedical advancements in the early detection, diagnostics, and therapy of disease. It includes image formation, image processing, image analysis, image interpretation and understanding, CT scan, PET, Ultrasound, X-Ray. Computer graphics and visualization and inverse problems in imaging; leading to applications to diverse areas in science, medicine, engineering and other fields. An MRI, or magnetic resonance imaging, is a painless way that medical professionals can look inside the body to see your organs and other body tissues. Medical imaging refers to several different technologies that are used to view the human body in order to diagnose, monitor, or treat medical conditions.

The previous volume 9 issue 3 describes the various aspects were discussed by the various authors from different parts of the world. In the Editorial, Dr Abuzaid MM briefly discusses comparison of quality of the images before and after applying the thyroid shields. An experimental study utilizing head attenuation phantom and multi-slice 16 CT scanner[1].

Dr Michailovna Melnichenko describes briefly on Topography of mental foramen in a selected Belarusian population according to cone beam computed tomography [2]. In the Editorial Dr Mark Page discussed on Radiation burden of hepatocellular carcinoma screening program in hepatitis B virus patients should we recommend magnetic resonance imaging instead? Author concluded that the current HCC surveillance

model utilising CT as the diagnostic test poses an additive risk of radiation induced cancer over the lifetime of engagement in a surveillance program [3]. Some clinical images are also released in the issue. Another Editorial by Dr James Todd Pearson describes on Correlation between diffusion tensor imaging and histological brain injury in ventilated preterm lambs. Author summarised that DTI was able to detect diffusivity changes associated with microstructural white matter impairment due to perinatal inflammation soon after delivery in preterm lambs. Further, there was an inverse correlation between FA and myelin density in the PVWM and to a lesser extent the IC regions. On final article Dr Sandhya G describes, A novel approach for the detection of tumor in MR images of the brain and its classification via independent component analysis and kernel support vector machine. Analysis on automatic and exact detection and classification of tumors in brain MR images is very important for the medical analysis and interpretation. Tumors which are detected and treated in the early stage gives better long-term survival than those detected lately. The best classification algorithm helps to take appropriate decision and provides the best treatment. This paper proposes a novel approach for the accurate segmentation and classification of the brain tumor from MR images. Initially, the tumor image is pre-processed with the anisotropic diffusion filter then a region based active contour is used to detect the tumor. Active Contour Model (ACM) will provide smooth and close contours and can achieve high accuracy. In the classification process, various features are extracted from the tumor images using the 2-D Daubechies DWT. The feature vector dimensions are reduced using Independent Component Analysis (ICA) [4].

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