

MRI OF CORPUS CALLOSUM IN PATIENTS WITH AUTISM SPECTRUM DISORDER IN KUANTAN

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ABSTRACT

The main objective is to study the integrity of the corpus callosum among autistic children population in Kuantan, Pahang, Malaysia. The integrity of the corpus callosum in this study is determined by diffusion tensor imaging (DTI) parameters, fractional anisotropy (FA) and radial diffusivity (RD) which represent the direction dependence of water molecules diffusion within the measured tissues. As corpus callosum is saturated with brain white matter tracts, the water molecules diffusion will be direction dependent. Several previous studies involving foreign populations have shown that there is some distortion in the brain's white matter diffusion tensor parameters in autistic population indicative of microstructural distortion. If similar findings would be observed in our local autistic population remains a question which we aim to study. Other gross corpus callosum parameters such as its thickness, length and size are also studied. 28 randomly selected autistic children who are under the International Islamic University Malaysia Medical Centre (IIUMMC), Kuantan follow up are subjected to MRI scan. A weak negative correlation is found between the age and the DTI's fractional anisotropy (FA) of the corpus callosum. Other parameters such as the thickness, length and size on the other hand show weak positive correlation with age. Although the correlation is weak, our study shows that there is evidence of distortion of corpus callosum white matter microstructure in children with autism spectrum disorder in Kuantan, Pahang.

Keywords: MRI, corpus callosum, autism spectrum disorder