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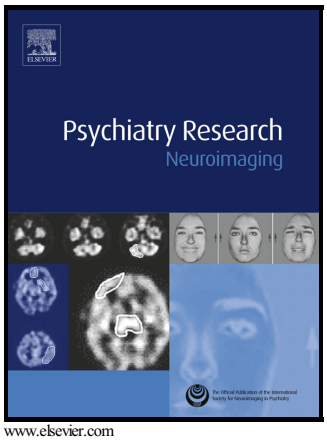

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Predictive classification of pediatric bipolar disorder using atlas-based diffusion weighted imaging and support vector machines

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Abstract

Previous studies have reported abnormalities of white-matter diffusivity in pediatric bipolar disorder. However, it has not been established whether these abnormalities are able to distinguish individual subjects with pediatric bipolar disorder from healthy controls with a high specificity and sensitivity. Diffusion-weighted imaging scans were acquired from 16 youths diagnosed with DSM-IV bipolar disorder and 16 demographically matched healthy controls. Regional white matter tissue microstructural measurements such as fractional anisotropy, axial diffusivity and radial diffusivity were computed using an atlas-based approach. These measurements were used to 'train' a support vector machine (SVM)