

Bayesian penalized likelihood reconstruction in PET/MR brain imaging: 11C-PE2I

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The performance of the Bayesian likelihood reconstruction algorithm in PET/MR brain imaging using receptor or transporter ligands has not previously been investigated. Ten patients underwent PET/MR brain scanning with the dopamine transporter ligand 11C-PE2I and images were reconstructed using a Bayesian penalized likelihood algorithm, with a regularization term of 25, 50, and 100, in addition to TOF-OSEM. The Bayesian algorithm produced images with a higher signal-to-noise ratio and decreasing noise as the regularization term was increased. Data reconstructed using a regularization term of 50 and 100 presented a higher signal-to-noise ratio than that from TOF-OSEM.

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