Application for Round-6 QIBA Project Funding

Title of Proposal: Multi-center Phantom Study to Characterize Bias and Precision of Quantitative I-123 SPECT		
QIBA Biomarker Committee/Task Force: Nuclear Medicine (SPECT) Biomarker Committee		
NIBIB Contract Objective(s): Objective 3		
PI (Project Coordinator or Lead Investigator Information)		
Last Name: Dewaraja	First Name: Yuni	Degree(s): PhD
e-mail:		Tel #:
Institution/Company: University of Michigan		
Total Amount Requested:		

Project Description

Objective is to determine the acquisition parameters and reconstruction methods for estimating the specific binding ratio (SBR) in ^{123}I ioflupane SPECT with higher precision and reduced bias. Currently, there is insufficient data to make strong recommendations on image acquisition and reconstruction parameters in the Profile. Studies using a physical striatal phantom will be performed at two sites that use SPECT/CT systems and reconstruction software from two different vendors. The overall aim is to improve differentiation between disease and non-disease groups, and to improve sensitivity for assessing changes in longitudinal studies in neurogenerative disease.

Specific Aims

1. To specify the attributes of reconstruction algorithms that are required to conform with the Profile claims for accuracy and precision of the measurand (SBR).
2. To characterize the total counts required to conform with the Profile claims for accuracy and precision of the measurand (SBR).
3. To provide benchmarks for hardware and software that assert conformance with the Profile.