RIDER Phantom PET-CT

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Summary

The RIDER Phantom PET-CT collection consists of repeat measurement PET/CT phantom scan collections carried out under the aegis of the Society of Nuclear Medicine (SNM) to discern the uniformity of clinical imaging instrumentation at various sites. They were obtained in cooperation with SNM as a resource for increased quantitative understanding of machine acquisition, analytic reproducibility and image processing.

The phantom was manufactured by Sanders Medical (www.sandersmedical.com) in December of 2006. The phantom was based on a NEMA NU-2 IQ phantom (manufactured by Data Spectrum, Durham NC), but with the central 5 cm diameter 'lung' cylinder of the IQ phantom removed. In addition the two larger fillable spheres were changed to hot spheres, as opposed to cold spheres as in the NEMA NU-2 specifications. Nominal target/background ratio was 4:1 with the initial background activity level set to be equivalent to 15 mCi in a 70 Kg patient, With the 271 day half-life of Ge-68 after 6 months the activity will be about 9.5 mCi. After a year it was 6 mCi.

About the RIDER project

The Reference Image Database to Evaluate Therapy Response (RIDER) is a targeted data collection used to generate an initial consensus on how to harmonize data collection and analysis for quantitative imaging methods applied to measure the response to drug or radiation therapy. The National Cancer Institute (NCI) has exercised a series of contracts with specific academic sites for collection of repeat "coffee break," longitudinal phantom, and patient data for a range of imaging modalities (currently computed tomography [CT] positron emission tomography [PET] CT, dynamic contrast-enhanced magnetic resonance imaging [DCE MRI], diffusion-weighted [DW] MRI) and organ sites (currently lung, breast, and neuro). The methods for data collection, analysis, and results are described in the new Combined RIDER White Paper Report (Sept 2008):

- RIDER White Paper: Combined contracts report (Sept 2008) PDF

The long term goal is to provide a resource to permit harmonized methods for data collection and analysis across different commercial imaging platforms to support multi-site clinical trials, using imaging as a biomarker for therapy response. Thus, the database should permit an objective comparison of methods for data collection and analysis as a national and international resource as described in the first RIDER white paper report (2006):

- **RIDER White Paper: Executive Summary PDF**
- **RIDER White Paper: Editorial in Nature.com**

Data Access

Data Access

Data Type	Download all or Query/Filter	License
Images (DICOM, 689 MB)	*Download* *Search* (Download requires the NBIA Data Retriever)	CC BY 3.0
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Detailed Description

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Detailed Description

Collection Statistics	Radiology Image Statistics
Modalities	CT, PET
Number of Patients	20
Number of Studies	20
Number of Series	60
Number of Images	2,231
Image Size (MB)	689

Additional annotation data about this collection can be viewed in the following document: Ge68Phantom_2015.doc.

Citations & Data Usage Policy

Citations & Data Usage Policy

Users must abide by the TCIA Data Usage Policy and Restrictions. Attribution should include references to the following citations:

Data Citation

Muzi, P., Wanner, M., & Kinahan, P. (2015). **Data From RIDER PHANTOM PET-CT (Version 2) [Data set].** The Cancer Imaging Archive. https://doi.org/10.7937/K9/TCIA.2015.8WG2KN4W

TCIA Citation

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Versions

Version 2 (Current): Updated 2015/01/26

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The Annotation Data document was updated with new information.

Version 1: Updated 2011/09/11

Original data upload.

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