The QIBA FDG-PET/CT Biomarker Committee: An Overview and Status Update

Accelerating the development of new therapies and improving assessment of response

Quantitative – Why and How

Why Quantitation?
- Precision individual patient care
- Clinically proven detection and longitudinal quantification for follow-up
- Allows imaging from diagnostics and staging to therapy assessment

Transition to a Technically Confirmed Profile

Profile Stages

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Public Comment</td>
<td>The profile describes key factors that affect the claim and has proposed recommendations that address these factors.</td>
</tr>
<tr>
<td>Publicly Reviewed</td>
<td>Each issue raised during Public Comment is formally addressed.</td>
</tr>
<tr>
<td>Technically Confirmed</td>
<td>Profile details have been implemented in more than one facility using a Field Test (discussed below) and each individual action (systems and persons) successfully meet the specifications.</td>
</tr>
<tr>
<td>Claim Confirmed</td>
<td>Overall performance was determined and claim was achieved.</td>
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FDG-PET/CT Profile Claim: If profile criteria are met, then tumor glycolytic activity as reflected by the maximum standardized uptake value (SUVmax) should be measurable from FDG-PET/CT with a within-subject coefficient of variation of 10-12%

Other Recent and Current Groundwork Projects

Test-Retest Measurements of Metabolic Tumor Volume

Primary goal: establish the biologic reproducibility of FDG PET metabolic tumor volume (MTV) and total lesion glycolysis (TLG) using the ann C data of ACRN RETR and METROC data.

Metabolic Tumor Volume Digital Reference Object (DRO)

A synthetic DCMR object for testing software computations of metabolic tumor volume

What We’re Doing and How You Can Participate

- Collection of recommendations for quantitation PET
- Presentation (with PNNL to AQA for thoracic science)
- NHLBI joint applications for future operations
- Var: 4 research projects in collaboration
- Var: 4 research project funding: physics: FDG, PET/CT, profile published and partially awarded
- Collaboration with ACR N and other protocols
- Annual Meetinging: established, new profile supporting group
- PET Analyst Profile Writing Group working for 2 years and become an ACRQ Sectional Committee
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- MLIIP Raw Data testing group: started
- Completed Phase II testing of ACRN PET/CT profiles
- Implementation of Profiles
- Clinical use of Profiles

For more information, visit http://qiba.nii.org

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QIBA Profiles: Guidance for All Aspects of Quantitation

- A synthetic DCMR object for testing software computations of metabolic tumor volume
- Based on the NEMA NU-2 image Quality phantom

MDR imaging for assessing therapy

Solution: Meanwhile, the result shows that the signiﬁcant non-linearity effect is not exist in the plane imaging test. The result shows that the signiﬁcant non-linearity effect is not exist in the plane imaging test.