Improving the Impact of the QIBA CT Small Lung Nodule Profile

Panel Discussion

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Impact Of Nodule Measurement Accuracy

Volume of Malignant Nodules in PanCan Baseline LDCT (N=121)
24.8% < 300 mm³, 38.8% < 524 (<10 mm diameter)

Decision Cut-points:
<100 mm³ Routine Surveillance
200 mm³ Early Recall
300 mm³ Diagnostic Work-up

Lancet Oncol 2017;18:e754-e66
# Improve Impact Of QIABA CT Small Lung Nodule Profile

<table>
<thead>
<tr>
<th>Lung-RADS</th>
<th>EU-NELSON</th>
<th>CPAC (Canadian Guideline)</th>
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</thead>
<tbody>
<tr>
<td><strong>Growth Criteria</strong></td>
<td><strong>Growth Criteria</strong></td>
<td>• Recommends screening sites conform with the QIABA CT Small</td>
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<tr>
<td>Mean Diameter increase ≥1.5</td>
<td>For nodule volume 100 - 300mm$^3$, Volume Doubling Time</td>
<td>Lung Nodule Profile using a standardized phantom</td>
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<td>mm</td>
<td>&lt;400 days; VDT 400-600 days (possible growth)</td>
<td>• Regular CT phantom testing is mandatory for quality</td>
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<tr>
<td>Volumetric techniques:</td>
<td>Volume ≥300mm$^3$ suspicious of malignancy</td>
<td>control of CT data acquisition, benchmarking of CT</td>
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<td>Use QIABA Lung Nodule</td>
<td></td>
<td>software post processing and data analysis.</td>
</tr>
<tr>
<td>Profile Calculator (v0.2)</td>
<td></td>
<td>• Significance of changes in diameter or volume should</td>
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<tr>
<td>(<a href="http://services.accumetra.com/">http://services.accumetra.com/</a></td>
<td></td>
<td>take into account the coefficient of variation in the</td>
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<tr>
<td>NoduleCalculator.html)</td>
<td></td>
<td>measurement and the software used.</td>
</tr>
</tbody>
</table>

Canadian Journal of Respiratory, Critical Care, and Sleep Medicine, DOI: 10.1080/24745332.2020.1819175
Predicting Lung Cancer Mortality Risk With Deep Learning
Can More Precise Measurement Personalize Follow-up Time More Accurately?

Peng Huang et al. Lancet Digital Health October 17, 2019
Head To Head Comparison Using Oncologic Quality Indicators

- Appropriateness of early recall CT, PET/CT
- Biopsy rate
- Number of invasive procedures for benign disease per 1000 people
- Cancer detection rate
- Missed cancers
- Interval cancers