

POSTER PRESENTATION

Open Access

Potential influence of automated volumetry on treatment response classifications in lung cancer lesions

Kaveh Akbari*, Alexandra Barthol, Irene Schnauder, v Wunn, Elmar Brehm, Bernd Lamprecht, Franz Fellner

From International Cancer Imaging Society (ICIS) 14th Annual Teaching Course Heidelberg, Germany. 9-11 October 2014

Purpose

To evaluate the potential influence of automated volumetry on treatment response classifications in lung cancer in comparison to manual unidimensional measurements.

Material and methods

60 patients (41 men, 19 women, mean age 61.8 ± 9.4 years) with histopathologically verified lung cancer were included in this retrospective study.

For each patient, up to 2 target lesions were quantitatively evaluated in a baseline and two follow-up CT scans (77 lesions, 154 response classifications) by two independent radiologists. Hilar and mediastinal masses, as well as lesions surrounded by atelectasis were excluded.

For each lesion a unidimensional diameter measurement, as well as an automated CT-volumetry was performed. In the follow-up studies, the response evaluation was assessed using RECIST compared to volume equivalents of RECIST with converted thresholds (-65/+73%).

Results

The results of the manual one-dimensional measurements varied between the two observers by $6.34 \pm 17.12\%$, affecting the volume to the power of 3, whereas the volumetric measurements varied only by $3.33 \pm 6.66\%$.

In 16.9% (26/154) of the cases the volumetric assessment led to a different response classification.

In 13% (20/154) of the cases the different response classification would have an effect on therapeutic decisions.

Conclusion

The volumetric assessment of lung cancer lesions can reflect the tumour burden more appropriately and therefore has a significant effect on response classifications and therapeutic decisions.

Published: 9 October 2014

doi:10.1186/1470-7330-14-S1-P30

Cite this article as: Akbari et al.: Potential influence of automated volumetry on treatment response classifications in lung cancer lesions. *Cancer Imaging* 2014 **14**(Suppl 1):P30.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



* Correspondence: kaveh.akbari@akh.linz.at
Department of Radiology, General Hospital Linz, Linz, Austria