

Quantitative computed tomographic descriptors associate tumor shape complexity and intratumor heterogeneity with prognosis in lung adenocarcinoma (LungCT-Diagnosis)

Summary

Redirection Notice

This page will redirect to <https://www.cancerimagingarchive.net/collection/lungct-diagnosis/> in about 5 seconds.

All the images are diagnostic contrast enhanced CT scans. The images were retrospectively acquired, to ensure sufficient patient follow-up. Slice thickness is variable : between 3 and 6 mm. All images were done at diagnosis and prior to surgery. The objective of the study was to extract prognostic image features that will describe lung adenocarcinomas and will associate with overall survival.

Two CT features were developed to quantitatively describe lung adenocarcinomas by scoring tumor shape complexity and intratumor density variation using routinely obtained diagnostic CT scans. The features systematically scored tumors and identified imaging phenotypes which exhibited survival differences. The features were extracted from routinely obtained CT images and were reproducible and stable despite the inherent clinical image acquisition variability. Our results suggest that quantitative imaging features can be used as an additional diagnostic tool in management of lung adenocarcinomas. More information is available in the related publication (see Citation tab below).

Acknowledgements

We would like to acknowledge the individual and institution that have provided data for this collection:

- **Moffitt Cancer Center** (Tampa Florida) - Special thanks to **Olya Stringfield, PhD** from the **Department of Cancer Imaging and Metabolism**.

Data Access

Data Access

Data Type	Download all or Query/Filter	License
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DICOM Metadata Digest (CSV, 11 kB)	Download	CC BY 3.0
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Clinical Data (DOC, 31 kB)	Download	CC BY 3.0

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Additional Resources for this Dataset

The NCI Cancer Research Data Commons (CRDC) provides access to additional data and a cloud-based data science infrastructure that connects data sets with analytics tools to allow users to share, integrate, analyze, and visualize cancer research data.

- [Imaging Data Commons \(IDC\)](#) (Imaging Data)

Third Party Analyses of this Dataset

TCIA encourages the community to [publish your analyses of our datasets](#). Below is a list of such third party analyses published using this Collection:

- [Long and Short Survival in Adenocarcinoma Lung CTs \(LUAD-CT-Survival\)](#)

Detailed Description

Detailed Description

Collection Statistics	Updated 12/30/2014
Modalities	CT
Number of Patients	61
Number of Studies	61
Number of Series	61
Number of Images	4,682
Images Size (GB)	2.5

TCIA DICOM Subject ID, SOP Instance UID, Instance Number, and Image Position (Patient) X-Y-Z are noted in [Representative-Tumor-Slices.xlsx](#)

The accompanying data are [survival data \(status: dead or alive, survival time in months\)](#) and [pathological stage \(TNM\)](#).

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

Grove O, Berglund AE, Schabath MB, Aerts HJWL, Dekker A, Wang H, Velazquez ER, Lambin P, Gu Y, Balagurunathan Y, Eikman E, Gatenby RA, Eschrich S, Gillies RJ. (2015). **Data from: Quantitative computed tomographic descriptors associate tumor shape complexity and intratumor heterogeneity with prognosis in lung adenocarcinoma.** The Cancer Imaging Archive. <https://doi.org/10.7937/K9/TCIA.2015.A6V7JIWX>

Publication Citation

Grove O, Berglund AE, Schabath MB, Aerts HJWL, Dekker A, Wang H, Velazquez ER, Lambin P, Gu Y, Balagurunathan Y, Eikman E, Gatenby RA, Eschrich S, Gillies RJ. (2015). **Quantitative Computed Tomographic Descriptors Associate Tumor Shape Complexity and Intratumor Heterogeneity with Prognosis in Lung Adenocarcinoma.** (A. Muñoz-Barrutia, Ed.) PLOS ONE. Public Library of Science (PLOS). <https://doi.org/10.1371/journal.pone.0118261>

TCIA Citation

Clark K, Vendt B, Smith K, Freymann J, Kirby J, Koppel P, Moore S, Phillips S, Maffitt D, Pringle M, Tarbox L, Prior F. **The Cancer Imaging Archive (TCIA): Maintaining and Operating a Public Information Repository**, Journal of Digital Imaging, Volume 26, Number 6, December, 2013, pp 1045-1057. DOI: <https://doi.org/10.1007/s10278-013-9622-7>

Other Publications Using This Data

TCIA maintains [a list of publications](#) that leverage our data. If you have a publication you'd like to add, please [contact the TCIA Helpdesk](#).

Versions

Version 1 (Current): Updated 2014/12/30

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