Data from Head and Neck Cancer CT Atlas

Description

This study describes a subset of the HNSCC collection on TCIA.

PURPOSE:

Cross sectional imaging is essential for the patient-specific planning and delivery of radiotherapy, a primary determinant of head and neck cancer outcomes. Publicly shared RT data is scarce due to high complexity of RT structure data and the need for registration in time, space, and across planning sets. We here introduce an open access imaging database for patients treated with radiotherapy for head and neck squamous cell carcinoma (HNSCC).

MATERIALS AND METHODS:

2840 consecutive patients with HNSCC treated with curative-intent RT at MD Anderson Cancer Center from 2003 to 2013 were screened. Patients with whole-body PET-CT or abdominal CT scans both before and after RT were included (n=215). Clinical data were retrieved from the MD Anderson Cancer Center custom electronic medical record system, ClinicStation. Using cross sectional imaging, we calculated total body skeletal muscle and adipose content before and after treatment. All files were de-identified and transferred to The Cancer Imaging Archive servers using the RSNA Clinical Trial Processor program. Files were screened for errors or residual PHI using TagSniffer and Posda Tools software, reviewed by TCIA curators, then confirmed at the parent institution.

RESULTS:

The HNSCC collection is a dataset consisting of 433,384 DICOM files from 3,225 series and 765 studies collected from 215 patients, which includes de-identified diagnostic imaging, radiation treatment planning, and follow up imaging. All imaging data are subject- and date-matched to clinical data from each patient, including demographics, risk factors, grade, stage, recurrence, and survival.

CONCLUSION:

Recent advances in data archiving, patient de-identification, and image registration have allowed for the creation of a high quality RT-enriched imaging database within TCIA. Open access to these data allows for interinstitutional comparisons of complete RT details in non-randomized patient populations, allowing for a more granular understanding of three dimensional factors that influence treatment effectiveness and toxicity sparing.

A related dataset describing the other component of the the HNSCC collection is here: **Radiomics outcome prediction in Oropharyngeal cancer** DOI: 10.7937/TCIA.2020.2vx6-fy46

Data Access

Data Access

Click the **Download** button to save a ".tcia" manifest file to your computer, which you must open with the NBIA Data Retriever

Data Type	Download all or Query/Filter
Images and Radiation Therapy Structures (DICOM)	Download
Clinical (XLS)	Download
Data Dictionary (XLS)	Download

Please contact help@cancerimagingarchive.net with any questions regarding usage.

Detailed Description

Detailed Description

Radiological Image statistics	
Modalities	CT, MR, PT, RT, RTPLAN, RTDOSE
Number of Patients	215
Number of Studies	766
Number of Series	3225
Number of Images	433,384
Images Size (GB)	93

Citations & Data Usage Policy

Citations & Data Usage Policy

Data Citation

Grossberg A, Mohamed A, Elhalawani H, Bennett W, Smith K, Nolan T, Chamchod S, Kantor M, Browne T, Hutcheson K, Gunn G, Garden A, Frank S, Rosenthal D, Freymann J, Fuller C.(2017). **Data from Head and Neck Cancer CT Atlas**. The Cancer Imaging Archive. DOI: 10.7937/K9/TCIA.2017.umz8dv6s

Publication Citation

Grossberg A, Mohamed A, Elhalawani H, Bennett W, Smith K, Nolan T, Williams B, Chamchod S, Heukelom J, Kantor M, Browne T, Hutcheson K, Gunn G, Garden A, Morrison W, Frank S, Rosenthal D, Freymann J, Fuller C. (2018) **Imaging and Clinical Data Archive for Head and Neck Squamous Cell Carcinoma Patients Treated with Radiotherapy**. *Scientific Data* 5:180173 (2018) DOI: 10.1038/sdata.2018.173

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. (2013) **The Cancer Imaging Archive (TCIA): Maintaining and Operating a Public Information Repository**, Journal of Digital Imaging, 26:6 pp 1045-1057. DOI: 10.1007/s10278-013-9622-7

Other Publications Using This Data

TCIA maintains a list of publications that leverage TCIA data. If you have a manuscript you'd like to add please contact the TCIA Helpdesk. Below are some of the gathered publications using this data:

1. Chamchod S., et al. **Quantitative body mass characterization before and after head and neck cancer radiotherapy: A challenge of height-weight formulae using computed tomography measurement.** Oral Oncol. 2016 Oct;61:62-9. doi: 10.1016/j.oraloncology.2016.08.012.
2. Grossberg AJ, Chamchod S, Fuller CD, et al. **Association of Body Composition With Survival and Locoregional Control of Radiotherapy-Treated Head and Neck Squamous Cell Carcinoma**. JAMA Oncol. 2016;2(6):782-789. doi:10.1001/jamaoncol.2015.6339

Versions

Version 1 (Current): 2019/07/11

Data Type	Download all or Query/Filter
Images (DICOM)	Download
Clinical (XLS)	Download
Data Dictionary (XLS)	Download