

Radiomics outcome prediction in Oropharyngeal cancer

Redirection Notice

This page will redirect to <https://doi.org/10.7937/tcia.2020.2vx6-fy46> in about 10 seconds.

Description

This study describes a subset of the [HNSCC](#) collection on TCIA.

There is an unmet need for integrating quantitative imaging biomarkers into current risk stratification tools and to explore the correlation between radiomics features –alone or in combination with clinical prognosticators- and tumor outcome. Clinical meta-data and matched baseline contrast-enhanced computed tomography (CECT) scans were used to build a cohort of 495 oropharyngeal cancer (OPC) patients treated between 2005 and 2012. Expert radiation oncologists manually segmented primary and nodal disease gross volumes (GTVp & GTVn). Structures were named per the American Association of Physicists in Medicine (AAPM) TG-263 recommendations, then retrieved in RT-STRUCT format. Matched patient, disease, treatment and outcomes data were obtained. Radiomics analysis was performed using an open-source institutionally-developed software that runs on Matlab platform.

A related dataset is here: **Data from Head and Neck Cancer CT Atlas**. DOI: [10.7937/K9/TCIA.2017.umz8dv6s](https://doi.org/10.7937/K9/TCIA.2017.umz8dv6s)

Acknowledgements:

This research was supported by the Andrew Sabin Family Foundation; Dr. Fuller is a Sabin Family Foundation Fellow. Drs. Mohamed and Fuller receive funding support from the National Institutes of Health (NIH)/National Institute for Dental and Craniofacial Research (NIDCR) (R01DE025248) and the National Institutes of Health (NIH)/National Cancer Institute (NCI) (1R01CA214825-01).

Dr. Fuller received/(s) grant and/or salary support from the NIH/NCI Head and Neck Specialized Programs of Research Excellence (SPORE) Developmental Research Program Career Development Award (P50CA097007-10); the NCI Paul Calabresi Clinical Oncology Program Award (K12 CA088084-06); a General Electric Healthcare/MD Anderson Center for Advanced Biomedical Imaging In-Kind Award; an Elekta AB/MD Anderson Department of Radiation Oncology Seed Grant; the Center for Radiation Oncology Research (CROR) at MD Anderson Cancer Center Seed Grant; the MD Anderson Institutional Research Grant (IRG) Program; and the NIH/NCI Cancer Center Support (Core) Grant CA016672 to The University of Texas MD Anderson Cancer Center (P30 CA016672).

Dr. Elhalawani was directly funded in part by a philanthropic gift from the Family of Paul W. Beach given to Dr. Gunn for patient-outcome database construction.

Data Access

Data Access

Some data in this collection contains images that could potentially be used to reconstruct a human face. To safeguard the privacy of participants, users must sign and submit a [TCIA Restricted License Agreement](#) to help@cancerimagingarchive.net before accessing the data.

Data Type	Download all or Query/Filter	License
Images - 814 series (DICOM, 51.6 GB)	Download (Download requires NBIA Data Retriever)	TCIA Restricted
Clinical Data (CSV, 86 kB)	Download	CC BY 4.0

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

Collections Used in this Third Party Analysis

- [Data from Head and Neck Cancer CT Atlas \(Head-Neck-CT-Atlas\)](#)
- [HNSCC](#)

Detailed Description

Detailed Description

Image Statistics	Radiology
Modalities	CT, RTSTRUCT

Number of Patients	412
Number of Studies	412
Number of Series	814
Number of Images	104,558
Images Size (GB)	51.6

Methods

Diagnostic contrast-enhanced computed tomography (CECT) Digital Imaging and Communications in Medicine (DICOM) files prior to any active intervention were collected for 495 OPC patients treated at our institution between 2005 and 2012. Expert radiation oncologists manually segmented primary and nodal disease gross volumes (GTVp & GTVn). Structures were named per the American Association of Physicists in Medicine (AAPM) TG-263 recommendations, then retrieved in RT-STRUCT format. Matched patient, disease, treatment and outcomes data were obtained. Radiomics analysis was performed using an open-source institutionally-developed software that runs on Matlab platform. Links to these can be found in the related publication.

Note from the investigators: Some PET scans will include two PET AC files—one includes the head & neck portion of the exam, the other includes eyes-to-thighs. There is no file naming convention to distinguish between the two, so delineation may require the use of a DICOM viewer.

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

Elhalawani H, White AL, Zafereo J, Wong AJ, Berends JE, AboHashem S, Williams B, Aymard JM, Kanwar A, Perni S, Mulder S, Rock CD, Grossberg A, Mohamed A, Gunn GB, Frank SJ, Rosenthal DI, Garden AS, Fuller CD; M.D. Anderson Cancer Center Head and Neck Quantitative Imaging Working Group (2018). **Radiomics outcome prediction in Oropharyngeal cancer** [Dataset]. The Cancer Imaging Archive. DOI: [10.7937/TCIA.2020.2vx6-fy46](https://doi.org/10.7937/TCIA.2020.2vx6-fy46)



Publication Citation

Elhalawani, H., Mohamed, A., White, A. *et al.* **Matched computed tomography segmentation and demographic data for oropharyngeal cancer radiomics challenges**. *Sci Data* 4, 170077 (2017). DOI: [10.1038/sdata.2017.77](https://doi.org/10.1038/sdata.2017.77)



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: [10.1007/s10278-013-9622-7](https://doi.org/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](#).

Versions

Version 2 (Current): Updated 2022/08/02

Data Type	Download all or Query/Filter
Images - 814 series (DICOM, 51.6 GB)	Download (Download requires NBIA Data Retriever)
Clinical Data (CSV, 86 kB)	Download

Corrected version of the clinical data CSV attached, because the investigators noticed an error in some of the durations of the endpoints including the overall survival, local and regional control, and freedom from distant metastasis. The original excel sheet had errors because the formulas to calculate the duration for patients with events were not applied so we fixed this error and now all the durations are correct.

Version 1: Updated 2020/03/31

Data Type	Download all or Query/Filter
-----------	------------------------------

Images - 814 series (DICOM, 51.6 GB)	Download (Download requires NBIA Data Retriever)
Clinical Data (CSV, 79 kB)	(download deprecated)