UConn Health

2017

CANCER PROGRAM

ANNUAL REPORT

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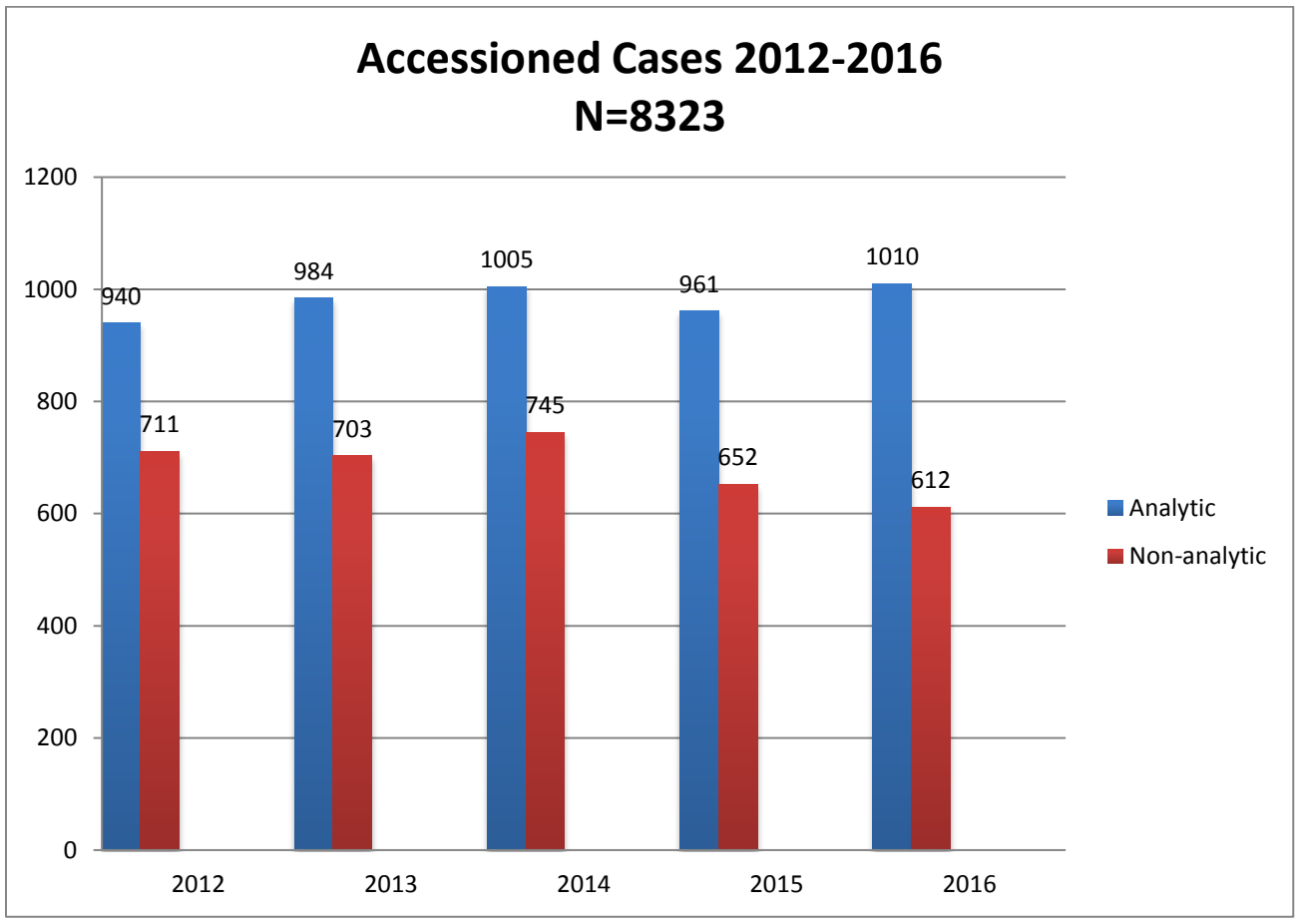
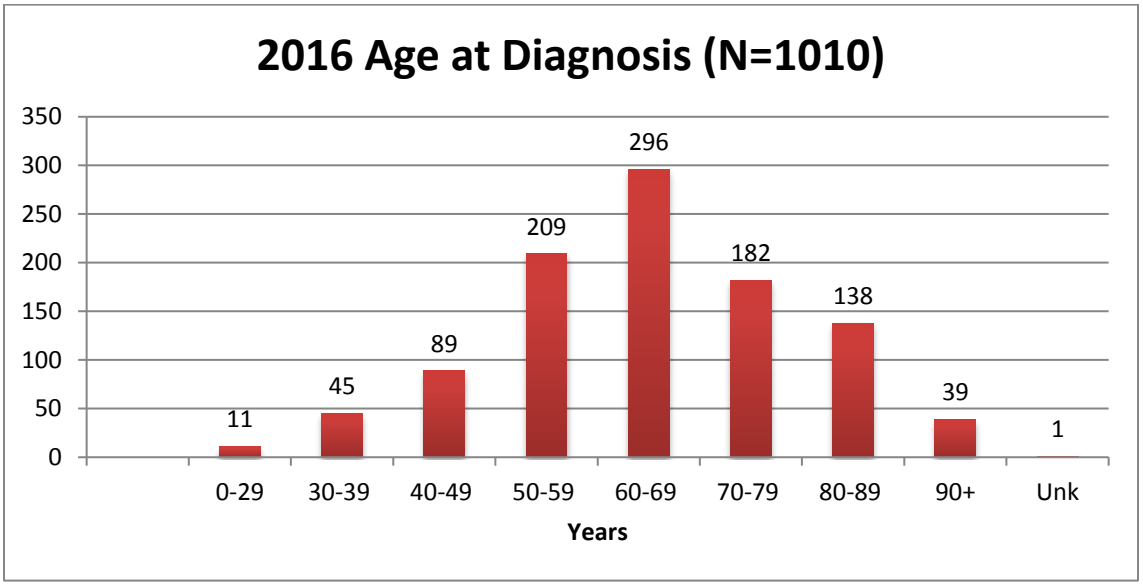
CANCER DATA MANAGEMENT

Cancer Data Management is a required component of all cancer programs accredited by the Commission on Cancer (CoC). In 2016, the Cancer Registry accessioned 1,622 cases. Of this total, 1,010 were newly diagnosed or analytic cases.

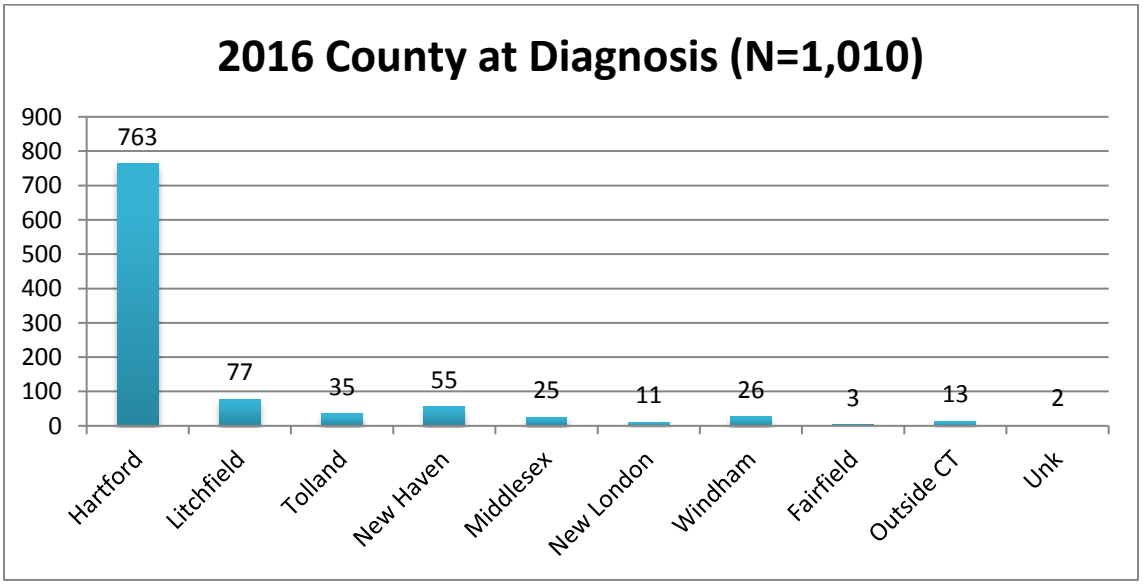
Cancer Data Management provides the means to collect demographics, staging, treatment, and follow-up of each case of cancer seen at UConn Health. Data processed by the cancer registry is used to produce data reports requested by administration and by the medical staff. All rules established by HIPAA are observed.

There were 17,099 cases in the cancer registry database as of 3/30/17. The 2016 follow-up rate, which is used in the calculation of survival data, was 92% for UConn. The nationwide follow-up rate is 90%. Cancer Data Management is staffed by three full-time CTR's and one full-time Oncology Data Management Technician.

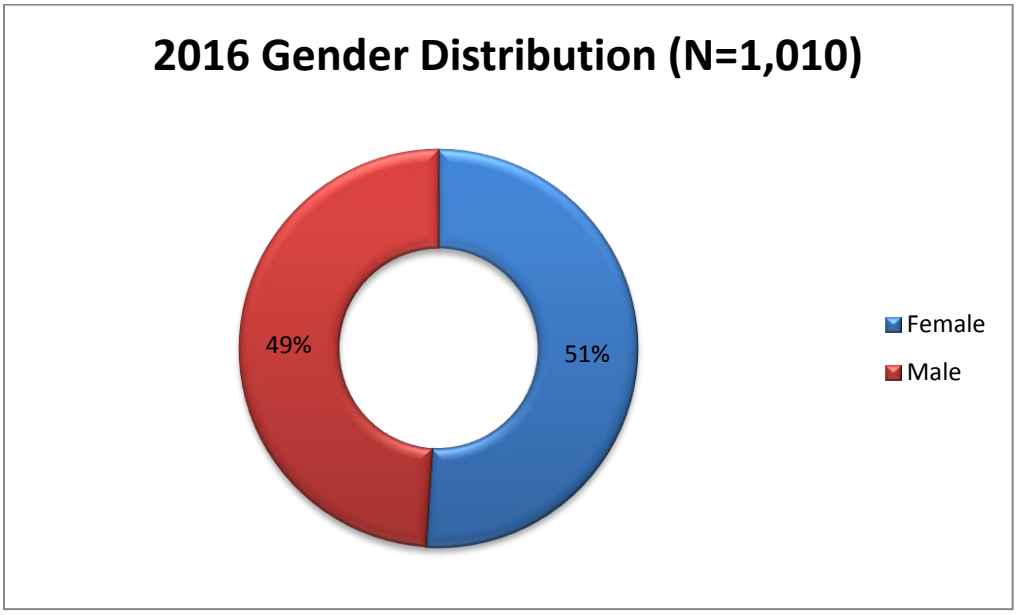




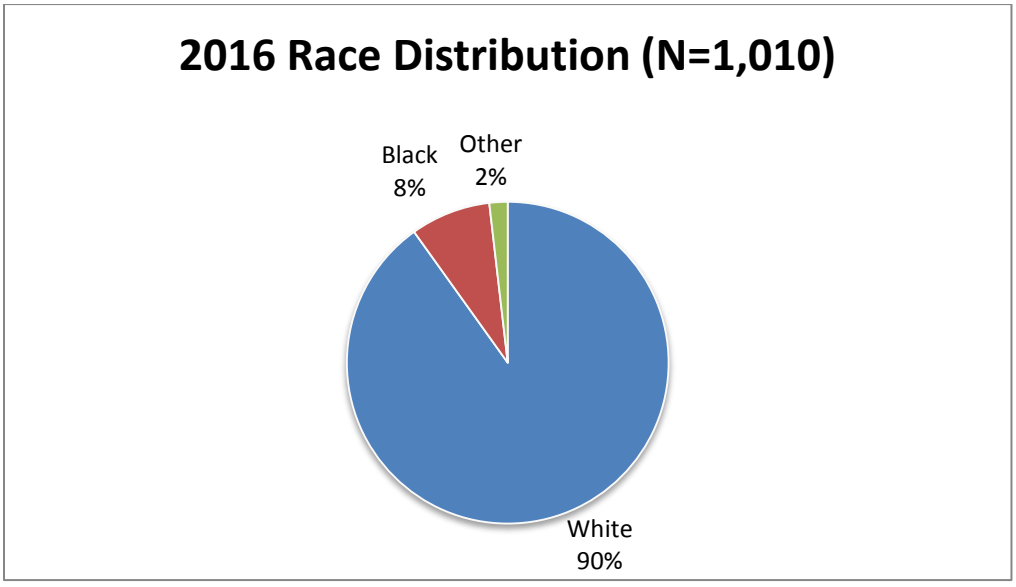
The mean age at diagnosis in 2016 was 64 years of age with patients ranging in age from 7 to 90+ years. Malignancies occurred mostly in the 4th and 5th decade of life.



Geographically, the majority of the newly diagnosed patients resided in Hartford County. In 2016, there were 763 patients from Hartford County. This represented 75% of the analytic cases collected.

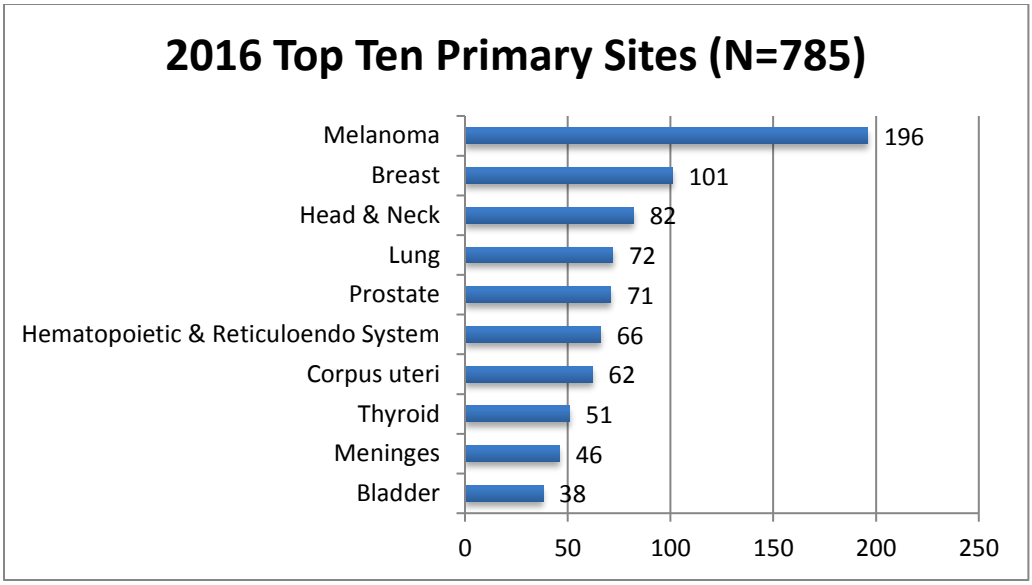


In 2016, there were 514 newly diagnosed female patients which represented 51% of the analytic caseload and 496 newly diagnosed male patients which represented 49% of the analytic caseload.



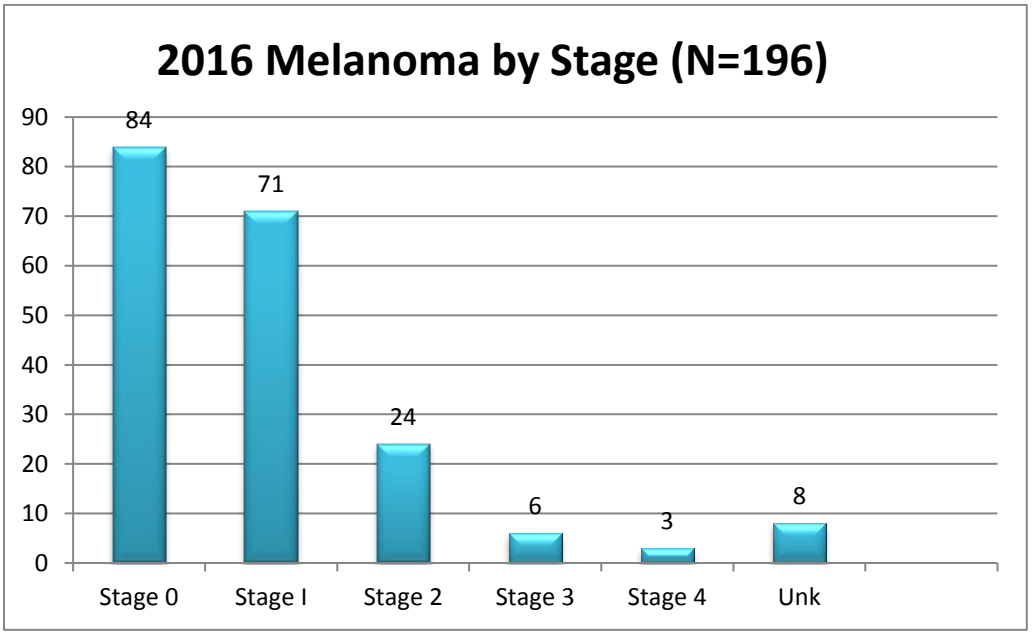
In 2016, there were 884 Caucasian patients, 79 African American, 18 listed as other, and 29 were unknown race.

TOP TEN PRIMARY SITES OF 2016



Skin and breast cancers were consistently the first and second most frequent sites of cancer seen at UConn Health. The top ten sites consisted of 78% of the total analytic caseload for 2016.

TOP FIVE PRIMARY SITES OF 2016



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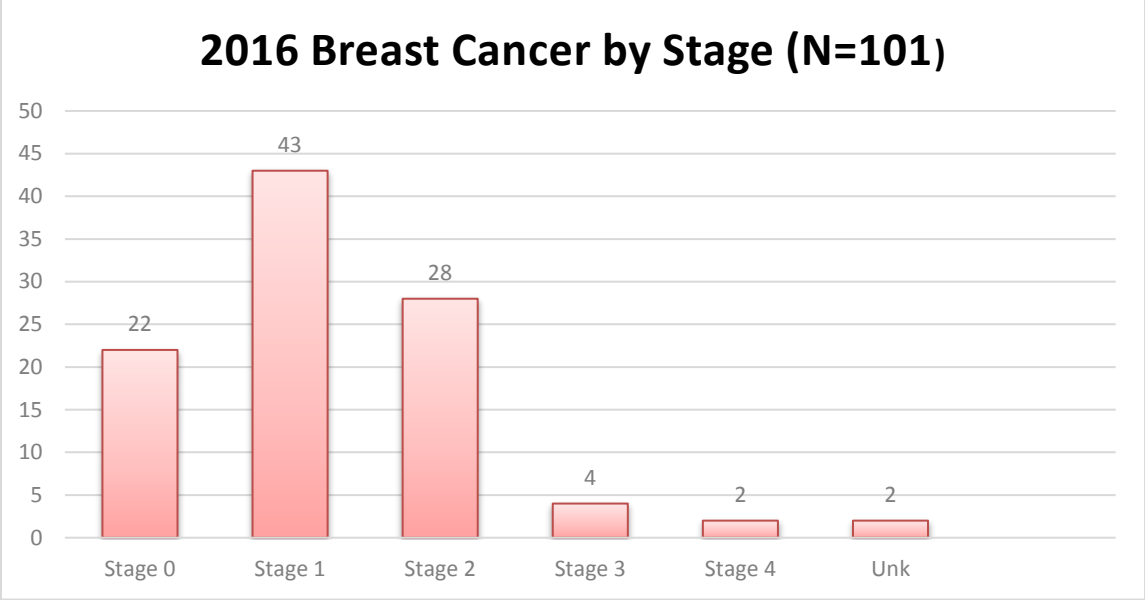

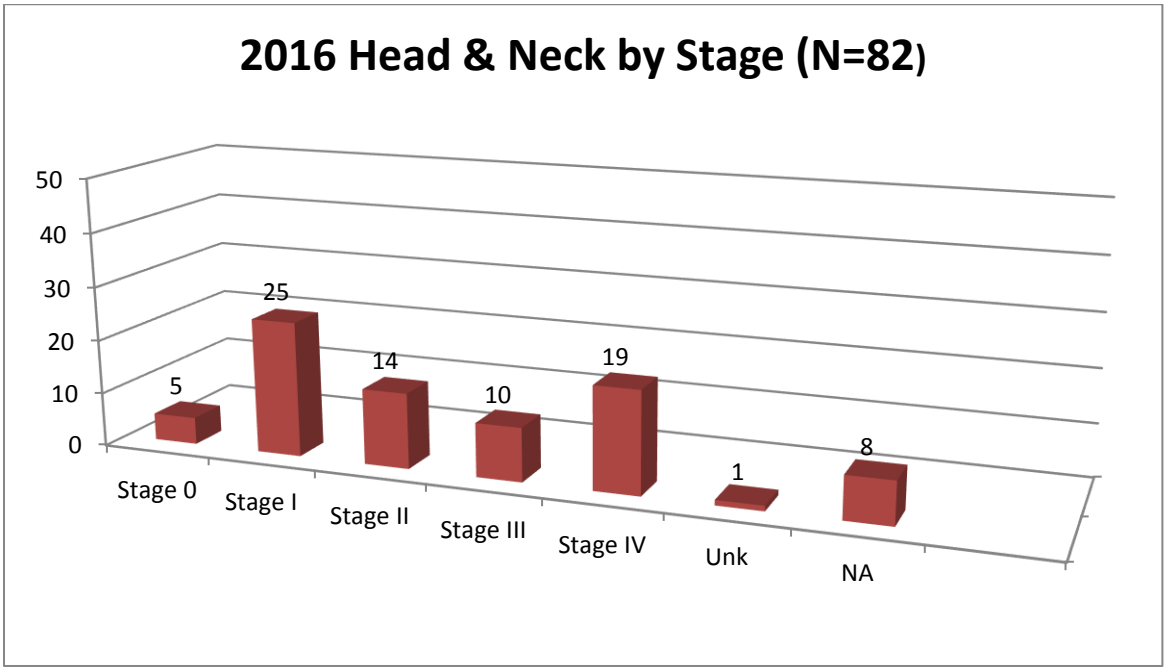

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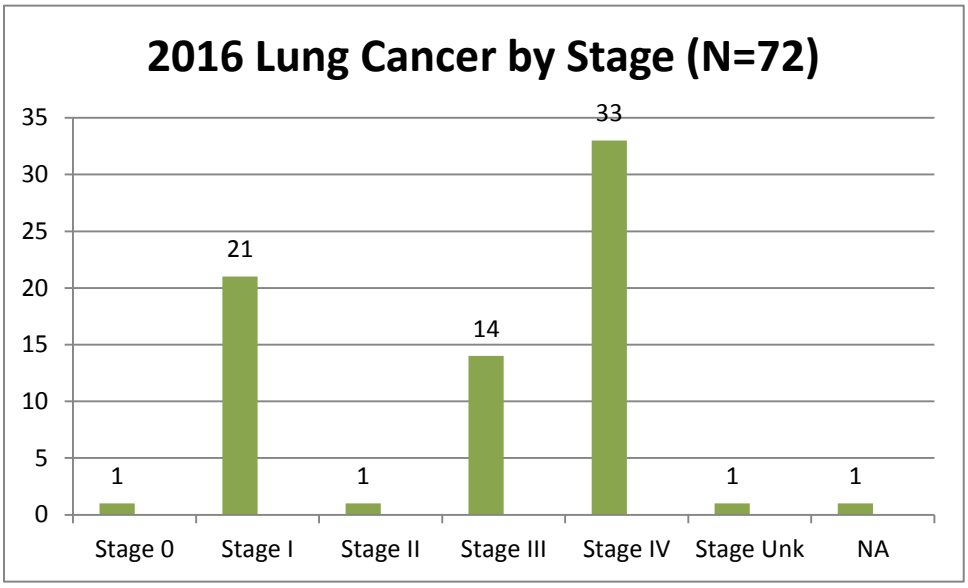

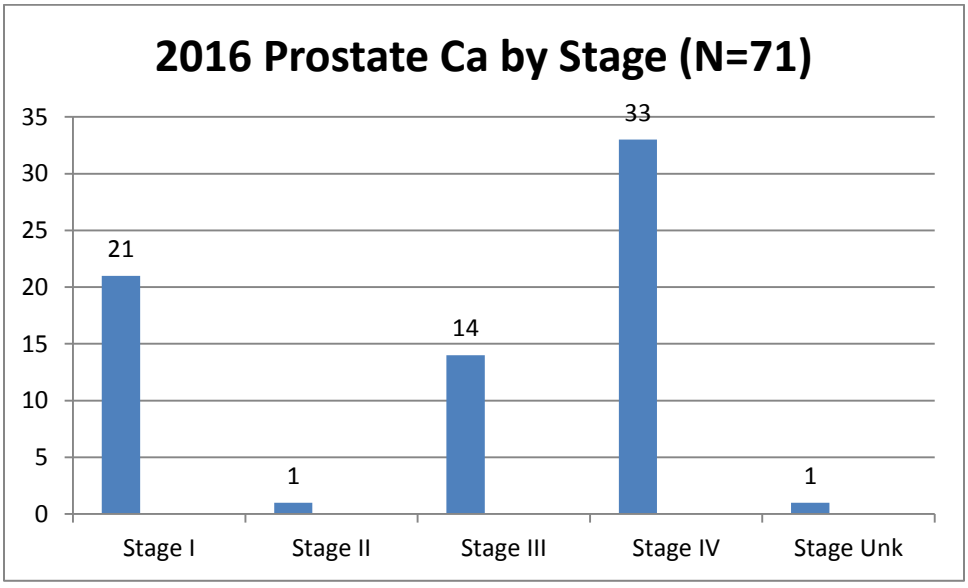

2016 Analytic Primary Site Distribution Summary

A total of 1,622 cases were accessioned into the Cancer Registry for 2016
There were 1,010 analytic and 612 non-analytic cases

Site	Total	Male	Female	Stg 0	Stg I	Stg II	Stg III	Stg IV	88	Unk
Lip	2	1	1	0	1	0	0	0	0	1
Tongue	26	21	5	4	6	2	4	7	0	3
Salivary Glands	5	2	3	0	1	1	1	2	0	0
Floor of Mouth	4	0	4	0	1	3	0	0	0	0
Gum & Other	17	9	8	0	6	4	0	3	0	4
Tonsil	5	5	0	0	0	1	1	3	0	0
Oropharynx	2	2	0	0	0	0	1	1	0	0
Hypopharynx	2	2	0	0	0	1	0	1	0	0
Esophagus	4	3	1	0	0	1	2	0	0	1
Stomach	7	5	2	0	2	0	0	5	0	0
Small Intestine	4	1	3	0	1	0	1	0	1	1
Colon	34	20	14	5	7	7	9	5	1	0
Rectum & rectosigmoid	18	13	5	0	1	2	7	5	1	2
Anus	5	3	2	2	0	1	1	0	0	1
Liver & Intrahepatic Bile Duct	11	7	4	0	3	0	3	1	3	1
Gallbladder	1	0	1	0	0	0	1	0	0	0
Other Biliary	2	1	1	0	1	0	1	0	0	0
Pancreas	11	9	2	1	0	4	0	4	1	1
Retroperitoneum	1	1	0	0	0	1	0	0	0	0
Peritoneum, Omentum, & Mesenter	2	0	2	0	0	0	1	0	1	0
Other Digestive Organs	2	2	0	0	0	0	0	0	2	0
Larynx	19	15	4	0	10	2	4	1	1	1
Lung & Bronchus	72	34	38	1	21	1	14	33	1	1
Soft Tissue	5	4	1	0	0	2	3	0	0	0
Melanoma- Skin	196	118	78	84	71	24	6	3	0	8
Other Non-Epithelial Skin	13	9	4	1	3	0	1	1	4	3
Breast	101	3	98	22	43	28	4	2	0	2
Cervix uteri	9	0	9	0	3	6	0	0	0	0
Corpus & Uterus, NOS	62	0	62	0	36	2	6	3	5	10
Ovary	12	0	12	0	4	0	3	4	1	0
Vulva	6	0	6	1	4	0	1	0	0	0
Other female genital organs	2	0	2	1	0	0	0	1	0	0
Prostate	71	71	0	0	15	41	7	6	0	2
Testis	2	2	0	0	1	0	0	0	0	1
Penis	4	4	0	1	1	2	0	0	0	0
Other Male Genital Organs	1	1	0	0	0	0	0	1	0	0
Urinary Bladder	38	22	16	15	11	6	1	3	0	2
Kidney & Renal Pelvis	18	10	8	0	11	2	2	3	0	0
Ureter	1	1	0	1	0	0	0	0	0	0
Other Urinary Organs	2	1	1	1	0	0	0	0	1	0
Brain	2	2	0	0	0	0	0	0	2	0
Cranial nerves Other Nervous Systen	46	14	32	0	0	0	0	0	46	0
Thyroid	51	15	36	0	25	5	11	6	0	4
Other Endocrine including Thymus	18	8	10	0	0	0	0	0	18	0
Hodgkin Lymphoma	4	3	1	0	0	2	1	1	0	0
Non-Hodgkin Lymphoma	31	21	10	0	6	3	6	13	1	2
Myeloma	17	8	9	0	0	0	0	0	17	0
Leukemia	14	8	6	0	0	0	0	0	14	0
Mesothelioma	2	1	1	0	0	0	1	1	0	0
Kaposi Sarcoma	2	2	0	0	0	0	0	0	2	0
Miscellaneous	24	12	12	0	0	0	0	0	24	0
Total	**1,010**	**496**	**514**	**140**	**295**	**154**	**104**	**119**	**147**	**51**

Diagnostic yield of endobronchial ultrasound-guided transbronchial needle aspiration at UCONN: A QI project

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Omar Ibrahim, MD

INTRODUCTION

Endobronchial ultrasound (EBUS) was introduced in the last decade, enabling real-time guidance of transbronchial needle aspiration (TBNA) of mediastinal and hilar structures and parabronchial lung masses

The American College of Chest Physicians' (CHEST) lung cancer guidelines (third edition) summarized the data on EBUS-TBNA in the mediastinal staging of lung cancer and reported an overall median sensitivity of 89% and a median negative predictive of 91%

Based on these findings, guidelines recommended ultrasound-guided, needle-based sampling techniques over surgical staging as the first step in the mediastinal staging of lung cancer

OBJECTIVE

To determine the diagnostic yield of EBUS-TBNA in UConn

To establish the negative predictive value and sensitivity of EBUS-TBNA in UConn

METHODS

All patients who underwent convex and radial probe endobronchial ultrasound-guided transbronchial needle aspiration from December 2014 to May 2015, were included in the study. Electronic medical records were reviewed and demographic data were abstracted along with clinical history and radiographic data.

Decision to proceed with EBUS-TBNA for investigation of lymphadenopathy, mediastinal mass for both pathological tissue diagnosis of abnormal clinical and radiographic findings including lymphadenopathy on CT imaging, FDG avidity on PET scanning, and mediastinal and hilar pathologic nodal staging of lung cancer.

EBUS-TBNA PROCEDURE

All of the EBUS-TBNA procedures were conducted by a dedicated interventional pulmonologist with or without fellows in training. All the patients were intubated and placed under general anesthesia for the procedures. Conventional flexible bronchoscopy was first conducted to examine the tracheobronchial tree.

DEFINITIONS

Reference standard

Cytologic analysis of EBUS-TBNA aspirates was compared with a reference standard of definitive pathologic tissue diagnosis or a composite of at least 3 months of clinical follow-up with radiographic imaging.

Definitive tissue sampling was defined by the cytologic evidence of lymphoid tissue, granulomatous inflammation or tumor. The results were classified as malignant, benign disease, normal/reactive hyperplasia, or inadequate sample. Sensitivity, specificity, negative predictive value and diagnostic accuracy were determined for malignancy.

Diagnostic yield

Diagnostic yield was defined as frequency of a specific diagnosis in comparison to the same diagnosis by reference standard.

RESULTS

There were 35 bronchoscopies with EBUS-TBNA utilizing both radial and convex probes performed from December 2014 to May 2015 at the University of Connecticut Health Center

There were 3 that had no reference standards as the patient transferred care elsewhere or refused further work up and were excluded from the analysis.

MALIGNANT

Twenty-six procedures were done due to high suspicion for malignant disease. Among the 26, 8 procedures utilized both radial and convex EBUS scopes; convex probe and routine endobronchial biopsies were performed in 2 patients; only the convex probe was used in 13 of the cases and 3 patients needed the radial probes alone.

There were 23 patients where the linear EBUS was used either alone or in combination with other procedures. The diagnoses of the procedures are detailed below, relative to the reference standard.

The diagnostic yield was 90.4%

One case had normal sized lymph nodes under endobronchial ultrasound and were not biopsied, which turned out to have malignant disease on lymph node excision. One other biopsy was negative but on repeat procedure at a different institution, it turned out to be malignant disease.

Diagnosis	Reference standard	EBUS-TBNA
Squamous cell lung CA	2	2
Adenocarcinoma	4	4
Metastatic disease (other primary outside of lung)	6	4
Benign disease	6	6
Lymphoproliferative disease	1	1
Lung cancer staging	4	4
TOTAL	23	21

BENIGN DISEASE

Nine patients underwent biopsies for reasons other than suspicion for malignant disease. There were 6 with granulomatous lymphadenitis with clinical and radiographic findings consistent with sarcoidosis and no prior history of cancer. One had no reference standard and was not included in the analysis. The diagnostic yield was 75%.

Diagnosis	Reference Standard	Diagnostic EBUS-TBNA
Granulomatous lymphadenitis	6	4
Reactive hyperplasia	1	1
Other (ILD)	1	1
TOTAL	8	6

RADIAL EBUS

There were 7 procedures using the radial EBUS probe to access peripheral lesions. Out of the 7, only 3 were diagnostic (true positives), 2 were falsely negative and in 2 other cases, the lesions could not be identified and so biopsies could not be done.

The 2 nodules that were falsely negative were measured at 1.0cm to 1.5cm at their narrowest diameter by computed tomography (CT). The sizes of the 2 nodules that could not be identified by radial EBUS were 1.2 and 1.3cm at their widest diameter by CT.

CONCLUSION

For suspicion of malignant disease,

Diagnostic yield is 90%
NPV = 82%
Sensitivity = 83%

Led to change in practice:

Lymph nodes >5mm under EBUS are now biopsied
A different biopsy needle is being utilized for lymphadenopathy due to causes other than malignant disease

REFERENCES

Kennedy MR, Jimenez CA, Morice RC, et al. Factors influencing the diagnostic yield of endobronchial ultrasound-guided transbronchial needle aspiration. J Bronchol Intervent Pulmonol 2010; 17:202-208

Wahidi MM, et al. Technical Aspects of Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration CHEST Guideline and Expert Panel Report. CHEST 2016; 149(3):816-835