Appropriate Reporting of Liver and Adrenal Glands in Patients with Non-small Cell Lung Cancer at Rutherford Regional

Introduction:

In review of a previous evaluation of our staging process, it has come to light that while the appropriate studies were performed, some CT reports had deficiencies. Of 11 reports they evaluated, 5 of 11 contained no discussion of findings pertaining to adrenal glands and 2 of 11 contained no discussion of findings pertaining to the liver. Of course, this does not mean that they were not evaluated, they just were not specifically mentioned in the reports.

The NCCN Non-Small Cell Lung Cancer (NCCN NSCLC) guideline recommends evaluation of the adrenal glands and the American College of Chest Physicians (ACCP) recommends evaluation of the liver and adrenals during the initial workup.

For a 2016 quality study, I have reviewed the initial diagnostic and staging reports of patients with non-small cell lung cancer for 2014 and 2015 to evaluate if the liver and adrenal glands were specifically discussed in the report. The benchmark used (per NCCN NSCLC and ACCP) will be 100% of reports should include a discussion of both organs.

Method:

Initial imaging, including Chest CT, Abdomen and Pelvis CT (Abd/Pel CT), and PET CT exams for all stage IV lung cancer patients seen at Rutherford Regional Hospital in 2014 and 2015 was assessed for inclusion of a discussion concerning the presence or absence of metastatic disease in the liver and adrenal glands. In addition, all images were reviewed to assess accuracy of reporting. Sixty exams from 39 patients were evaluated by a board certified radiologist with 14 years of experience including 34 Chest CTs, 15 Abd/Pel CTs, and 11 PET/CT exams.

Results:

	Total	Discuss liver and adrenals	Discuss liver or adrenals	Discuss neither	Agree with interpretation
Patients	39	21 (54%)	10 (26%)	8 (21%)	
Exams					
Chest CT	34	13 (38%)	12 (35%)	9 (26%)	34
Abd/Pel CT	15	12 (80%)	3 (20%)	0 (0)	15
PET/CT	11	1 (9%)	4 (36%)	6 (55%)	11
Radiologist/Chest CT reports only					
A	6	0	3	3	6
B	4	3	1	0	4
C	6	2	3	1	6
D	2	1	0	1	2
E	16	7	5	4	16

Radiologist/Abd-Pel CT reports only					
A	5	2	3	0	5
B	2	2	0	0	2
C	2	2	0	0	2
D	2	2	0	0	2
E	4	4	0	0	4

Discussion:

Review of all of the cases demonstrates no missed metastatic foci in the adrenal glands or liver. However, only 54% of reports met the standards established by NCCN and ACCP for the active inclusion of the liver and adrenal glands in the initial imaging staging with an additional 26% including one or the other.

For specific exams, only 38% of chest CT reports met the standards established by NCCN and ACCP for the active inclusion of the liver and adrenal glands in the initial imaging staging with an additional 35% including one or the other. By comparison, 80% of CT Abd/Pel reports had active inclusion of the liver and adrenal glands but only 9% of PET CT reports had the active inclusion.

All reports had indirect reference to the absence of lesions in the liver and adrenal glands with statements such as “The upper abdomen is normal”. 100% of the reports that demonstrated a finding in the liver or adrenal glands discussed the organ of involvement. In each report not meeting the standard, the specific organ not mentioned was normal.

There was not a strong difference between radiologists in meeting the standard with the exception of Radiologist B who met the standard in 75% of his chest CT reports. He did have a lower number of exams assessed.

Each radiologist was questioned whether they knew that specifically mentioning the liver and adrenal glands (normal or abnormal) was a recommendation for reporting on lung cancer CT scans. They were unaware of the recommendation. Each indicated a desire to meet the standard and stated that they will begin to include specific mention of the adrenal gland and liver in their reports.

Conclusion:

Review of initial diagnostic and staging exams for patients with Stage IV lung cancer diagnosed at Rutherford Regional Hospital in 2014 and 2015 met the NCCN and ACCP recommendations in 54% of patients. The other 46% of patients either mentioned the liver or adrenal gland or failed to specifically discuss either of them. Despite the lack of specific discussion of the liver and adrenals in these reports, there were no missed metastatic foci, consistent with a high quality interpretation.

The primary reason for this was lack of knowledge of the recommendation by the radiologists. This lack of knowledge has been addressed and future reports will likely each meet the standard.