Encouraging the Assignment of LI-RADS Scores by Radiologists via Reporting Template Changes

David Tsai MD, Joon Oh DO, Jeffrey Kempf MD, Halley Park MD, Levi Sokol MD

Department of Radiology

Robert Wood Johnson University Hospital

RSNA® 2022

Empowering Patients and Partners in Care

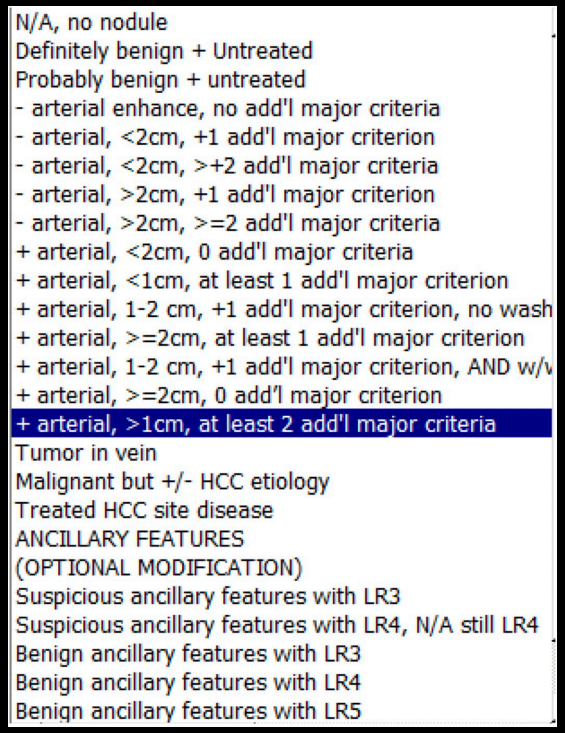
RUTGERS

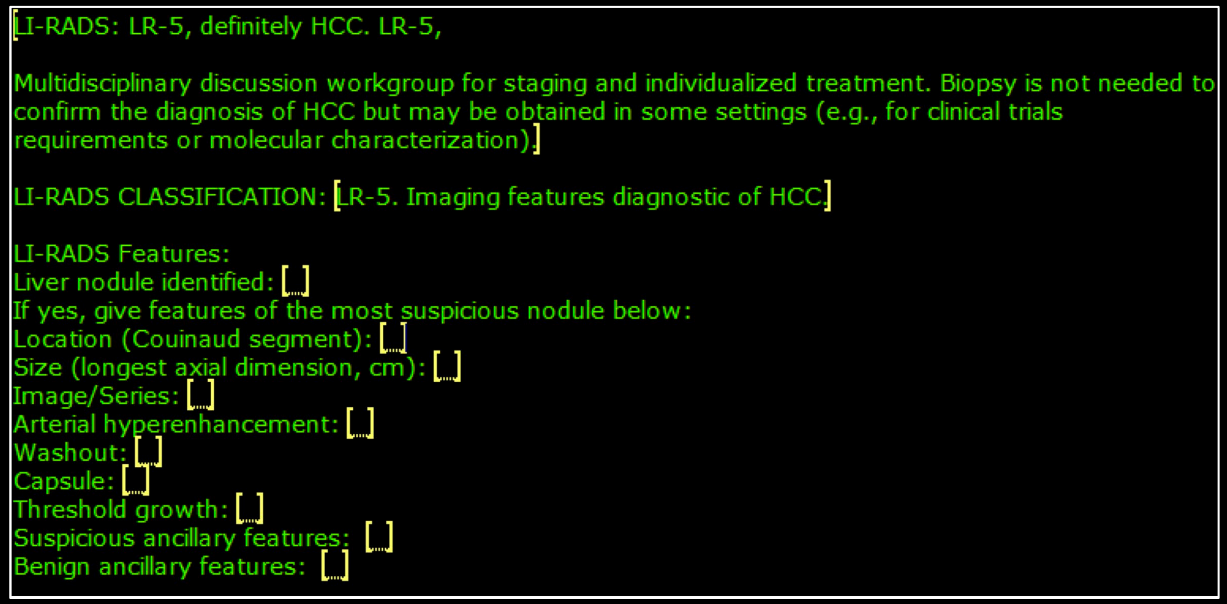
Robert Wood Johnson Medical School

Introduction

- Liver Imaging Reporting and Data Systems (LI-RADS) was first introduced in 2011 to standardize lexicon and diagnostic criteria, providing clinicians with clearer reports and management options
- According to LI-RADS, patients who are high-risk for HCC (known cirrhosis, chronic hepatitis B viral infection, or current/prior HCC) deserve a LI-RADS score
- University Radiology Group implemented several changes to structured reporting templates to encourage use of LI-RADS score
- Prior to this, compliance rate for MR studies that meet criteria for LI-RADS score use was low

Methods: First Template Change



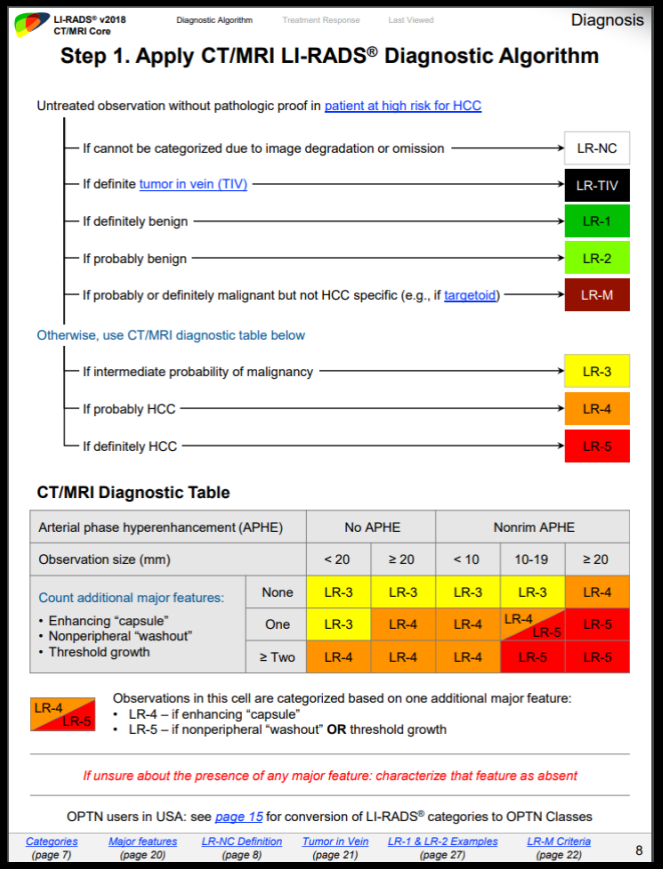


- First template change occurred on 5/30/2018
- Pick list in impression field that lets radiologist calculate LI-RADS score with criteria provided

Methods: Second Template Change

History of HBV, Cirrhosis or HCC: [No]

Refer to attached LI-RADS chart.
Negative
LR-1, definitely benign
LR-2, probably benign
LR-3, intermediate probability of malignancy
LR-4, probably malignant
LR-5, definitely malignant
LR-NC, not characterized
LR-M, cancer but not definitely HCC
LR-IV, tumor in vein
LI-RADS CALCULATOR IS AVAILABLE IN BRACKET BELOW, IF NEEDED.



- Second template change occurred on 10/1/2020 to further increase compliance
- Addition of field reminding radiologist whether patient qualifies for a LI-RADS score by asking whether patient has a history of HBV, cirrhosis, or prior HCC
- LI-RADS scoring system also attached within PACS

Methods: continued

- To calculate compliance rate prior to any template changes, May 2018 was chosen as a representative month for data
- Studies that met criteria for LI-RADS score or given a score were counted
- Studies that had no LI-RADS score but had findings not felt to be clinically significant were also counted

Results

	Meets criteria for LI-RADS score	Used LI-RADS score	Findings felt to be not clinically significant	Nominal compliance[1]	Adjusted compliance [2]
Prior to any template changes (5/1/2018 - 5/29/2018)	31	1	20	3.23%	35.48%
First change (10/1/2020 - 12/22/2020)	96	20	70	20.83%	93.75%
Second change (10/1/2020 - 12/22/2020)	44	18	25	40.91%	97.73%

[1]Nominal compliance: study that meets criteria for LI-RADS score (known hepatitis B virus infection, cirrhosis, or hepatocellular carcinoma on contrast-enhanced studies)
[2]Adjusted compliance: nominal compliance but excluding findings not felt to be clinically significant (benign findings, cirrhosis, interval follow up of a known lesion)

Conclusion

- Introduction of LI-RADS was meant to standardize lexicon and diagnostic criteria, reduce vague wording used by radiologists, and provide clearer management options for referring clinicians
- Prior to structured reporting changes, low compliance rate for LI-RADS score reports (adjusted compliance rate: 35.48%)
- After two template changes (5/30/2018, 10/1/2020), both nominal/adjusted compliance rates increased dramatically
  - With second template change, nominal compliance rate is 40.91% while adjusted compliance rate is 97.73%
- With right guidance structured in the reporting template, compliance rate will increase

References

1. “CT/MRI LI-RADS v2018.” CT/MRI LI-RADS v2018 | American College of Radiology, www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/LI-RADS/CT-MRI-LI-RAD S-v2018.