

Inpatient versus Outpatient MRI? Outcomes for Discharged Patients with Newly Diagnosed Hepatocellular Carcinoma

Ho-Man Yeung, MD

Department of Medicine, Temple University Hospital, Philadelphia, PA

PROBLEM

Patients with primary liver mass(es) typically will need advanced imaging, CT or MRI with liver protocol to further characterize.

Outpatient MRI is difficult to coordinate. Patients with HCC are very sick as they may have accompanying liver failure

Question: For patients admitted in the hospital, should we do inpatient MRI or outpatient MRI?

METHODS

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Design: Retrospective chart review, single center

Inclusion/Exclusion: Included all patients from TUH main campus with NEW discharge diagnosis of C22.0 (Liver cell carcinoma) between two year period 01/01/2020-12/31/2021. Excluded patients who did not have HCC and have known HCC prior to encounter

TABLE 1. Patient demographic and treatment breakdown

N=41	
Male (%)	33 (80%)
Age, median	64
Race	
White	6 (15%)
Black	22 (54%)
Hispanic	13 (32%)
Medical History	
Chronic Hepatitis B	1 (2%)
Chronic Hepatitis C	15 (37%)
Alcohol use disorder	17 (41%)
Type 2 Diabetes Mellitis	16 (39%)
Metastatic status	14 (34%)
Transitioned to hospice	7 (17%)
Inpatient consult to hepatology	29 (70%)
Discharge appointment request	27 (66%)
nivolumab	7
atezolizumab/bevacizumab	4
TACE	5
MWA	2
Radiation	5
Resection	1

FINDINGS

1. Fewer discharge appointment request for non-IP group
2. MRI occurs on average at hospital day 2.2; Majority of patients could not get outpatient MRI
3. Five of six patients lost to follow up were not offered inpatient MRI
4. Getting MRI inpatient did not impact median length of stay
5. Time to treatment is about the same. But IP group is more likely to get treatment by absolute increase 26%, or relative increase 62%
6. Every patients were outside of Milan criteria, therefore not transplant candidate.
7. All patients were treated with palliative intent, except for 1 patient who had a liver resection.

	All	IP MRI	non IP MRI
N=	41	23	18
Transition to IP/home hospice	7 (17%)	1 (4%)	6 (33%)
Metastatic on presentation	14 (34%)	9 (39%)	3 (17%)
Inpatient consult to hepatology	29 (70%)	20 (87%)	9 (50%)
Discharge appointment request	27 (66%)	19 (82%)	8 (44%)
N minus hospice=	34	22	12
Average time to MRI		2.2 days	
Lost to follow up	6 (18%)	1 (4%)	5 (42%)
Median LOS	6 days	6 days	7 days
Total death	18 (52%)	11 (50%)	7 (58%)
<i>In-hospital death</i>	4 (22%)	2 (17%)	2 (28%)
<i>Death <90d post discharge</i>	9 (50%)	6 (54%)	3 (43%)
<i>Death 90-365d post discharge</i>	5 (28%)	3 (27%)	2 (28%)
Received Treatment	20 (58%)	15 (68%)	5 (42%)
Median time to Tx	33.5 days	31 days	34 days
Survival >1 year	16 (47%)	11 (50%)	5 (42%), also lost to follow up

TABLE 2. Major clinical outcomes between inpatient (IP) MRI group and non IP group. Seven patients were transitioned to hospice during hospitalization, therefore excluded, as MRI would obviously be deferred if they are actively dying.

CONCLUSION

Poor overall clinical outcome. High mortality with only 47% survival rate beyond 1 year. 50% of all death are within 90 days of discharge.

IP group has higher rate of treatment, fewer lost to follow up, without increase in inpatient LOS.

Any non-hospice patients with incidental liver mass should get IP MRI prior to discharge with 1-2 week follow up with hepatology and oncology