

Multidisciplinary Management of a Patient with Hepatocellular Carcinoma Affected with COVID 19

Manoj Kumar Patta¹, Soundappan Somasundaram^{1*}, Vijai Anand¹, Nalankilli VP¹, Srinivasan Muthukrishnan¹ and Srikanth B²

¹GEM Hospital and Research Center, Surgical Gastroenterology, India

²GEM Hospital and Research Center, Radiology, India

*Corresponding Author: Soundappan Somasundaram, GEM Hospital and Research Center, Surgical Gastroenterology, India.

Received: November 06, 2021

Published: December 30, 2021

© All rights are reserved by Soundappan Somasundaram., et al.

Abstract

Hepatocellular carcinoma is the sixth most common cancer in the world, which accounts for approximately 6% of all cancer incidences [1]. Compared to other neoplasms, HCC patients are more susceptible to the effects of the COVID-19 pandemic as the hepatic injury caused by SARS-CoV-2 could complicate the pre-existing hepatitis virus infection and cirrhosis in most HCC patients [2]. COVID-19 also causes organ dysfunction, complicating cancer treatment. With the outbreak of COVID-19, modifications of cancer management have been adopted to accommodate the crisis and minimize the exposure of cancer patients to the infection. COVID 19 pandemic has led to treatment delays and also change in management protocols. Here we present a case of HCC patient affected by COVID and post COVID treatment complications and its sequelae, managed effectively with multidisciplinary approach.

Keywords: COVID-19; SARS-CoV-2; Hepatocellular Carcinoma

Case Details

A 62 years old gentleman diagnosed to have Hepatocellular carcinoma, and after thorough evaluation planned for Right hepatectomy. He is a known case of type II diabetes mellitus on treatment. Meanwhile he got infected with SARS CoV2 and developed severe COVID 19 illness and received steroids as a part of treatment. Following which he developed Mucormycosis and had undergone FESS. He developed AKI due to Amphotericin, and Posaconazole induced liver injury leading to prolonged elevated liver enzymes. While recovering from this, he developed sudden onset pain abdomen. At presentation his vitals were stable. Blood investigations showed mildly elevated liver function tests. Hemoglobin was 12.4 gm/dl, total counts were 13390, total bilirubin was 3.5 mg/dl, direct bilirubin was 2.7 mg/dl, AST 60 U/L, ALT 69 U/L, ALP 226 U/L, INR 1.36. Tumour markers were done - AFP 2.9 ng/ml, CEA 2.3 ng/ml, CA 19.9 was 0.01 U/ml. CECT abdomen was done which

showed features of intra tumour bleed in right lobe HCC lesion. He was taken up for emergency TACE procedure. He underwent TACE with lipoidal and doxorubicin. He was discharged a week after the procedure. MRI done 6 weeks later showed some persisting enhancement in HCC based on RECIST criteria.

So he was considered for surgery as planned earlier (Right hepatectomy) but now with significant weakness, relatively poor performance and persistent bilirubin levels at 2 mg/dl compared to pre COVID status. Future liver remnant was borderline at 40 percent with suspected liver cirrhosis on imaging though no obvious signs of cirrhosis or portal hypertension were present. Diagnostic laparoscopy was done which showed macronodular hard cirrhosis, so a calculated decision against surgery was made and we proceeded to a second session of TACE and holding our hopes high on oncological longitivity.

Discussion

Coronavirus disease 2019, caused by the severe acute respiratory syndrome coronavirus 2, has led to a global pandemic in 2020. COVID 19 pandemic has led to reallocation of healthcare resources which imposed significant impact on the treatment of patients with chronic diseases and malignancies. COVID 19 infection itself causes organ dysfunction and the restrictions imposed due to pandemic has led to difficult access to healthcare system by these patients.

About 15-54% of patients with confirmed COVID-19 have hepatic injury, typically manifested as an elevation of liver enzymes alanine aminotransferase and/or aspartate aminotransferase, occasionally accompanied by a mild degree of hyperbilirubinemia. In up to 54% of patients with COVID-19 gamma-glutamyl transferase has also been reported to be raised. Alkaline phosphatase may be disproportionately increased compared to ALT/AST levels [3-10]. In most patients, the hepatic injury is transient but permanent damage has been reported in severe cases of COVID-19. The degree of hepatic dysfunction is also worse in patients with more severe COVID-19 [5,11].

The mechanism of hepatic injury can be because of the direct effect of the virus or indirect mechanisms via the drugs used for treating COVID. Direct cytopathic effects of the virus on hepatocytes and/or cholangiocytes via the angiotensin-converting enzyme 2 receptor, immune-mediated inflammation, and hypoxia from pneumonitis have been postulated to be potential mechanisms [12,13]. An indirect mechanism, particularly the drug-related hepatotoxicity, is also possible as the patients are usually treated with multiple antivirals, antibiotics, and supportive agents which could increase liver enzyme levels. The administration of tocilizumab for disease-induced cytokine release syndrome is associated with increased AST/ALT levels and risk of toxic hepatitis [14].

Patients with cancer are at a higher risk of suffering from COVID-19 than non-cancer patients. Compared to non-cancer COVID patients, development of COVID-19 in cancer patients was associated with worse outcomes, including a higher admission rate to intensive care units and higher mortality [15,16].

A study by Giuliana Amaddeo in 2020, showed a delay in treatment longer than 1 month in 21.5% of their patients in 2020 compared to 9.1% patients in 2019 [17].

The COVID-19 pandemic has significantly impacted the management of HCC among Asia-Pacific countries and the impact varied according to the disease stage and country as per the survey

conducted by Gandhi M et al. This survey compared cohorts of HCC patients diagnosed in pre and pandemic periods and noticed a decline of 26.7% in new HCC cases, delays in diagnosis (48.2% in BCLC 0/A/B and 51.9% in BCLC C), delays in treatment (66.7% in BCLC 0/A/B and 63.0% in BCLC C), changes in treatment modality (33.3% in BCLC 0/A/B and 18.5% in BCLC C), an increase in treatment complications (about 15% across all BCLC stages) [18].

At the beginning of the pandemic, severe restrictions were applied in the intervention radiology departments for performing elective procedures. All the elective intervention radiological therapies like percutaneous ablations and various types of transarterial therapies were restricted and resources were diverted for COVID management. There were also concerns about the usage of TACE in HCC patients in the initial days of the pandemic suspecting the systemic absorption of the chemotherapy drugs might increase the susceptibility of HCC patients to COVID.

Due to the treatment limitations imposed by the pandemic and the risk of exposure, a consensus amongst clinicians has been that deviations from the standard of care are necessary during the management of HCC. The first principle of modification of clinical practice is to defer treatment to reduce the spread of SARS-CoV-2 amongst cancer patients. The second principle is to modify treatment according to the best evidence and availability of resources in each specialty. Modifications should be made in the context of multidisciplinary settings with clear documentation so that principles of clinical governance and accountability are maintained.

Specific international guidelines have been framed for the management of HCC during this pandemic by American Association for the Study of Liver Disease, the European Association for the Study of the Liver, the International Liver Cancer Association, the Asian Pacific Association for the study of the Liver, and the São Paulo Clínicas Liver Cancer Group Multidisciplinary Consensus Statement [19-23].

Our patient was diagnosed to have HCC and after thorough evaluation, he was planned for surgery – right hepatectomy. Unfortunately he got infected with SARS CoV2 and developed severe COVID 19 illness, and post treatment Mucormycosis and its treatment related complications. While recovering from this, when he presented to us with intratumor bleed he was effectively managed with timely intervention in the form of TACE. He was optimized and immediately taken up for TACE. Post procedure he gradually recovered. MRI showed persistent disease activity and planned for surgery which could not be done as cirrhosis noted on diagnostic

laparoscopy. Multidisciplinary discussion has been done and he was taken up for second session of TACE. Despite all the hurdles this patient has been effectively managed with the help of multidisciplinary approach in a tertiary care centre.

All patients should undergo multidisciplinary team evaluation using strict selective criteria and devise a treatment strategy for each patient to cope up with the current situation. The main goals should be to optimize the risk/benefit ratio and being flexibility in decision making has become mandatory in order to adapt to the different phases of this pandemic.

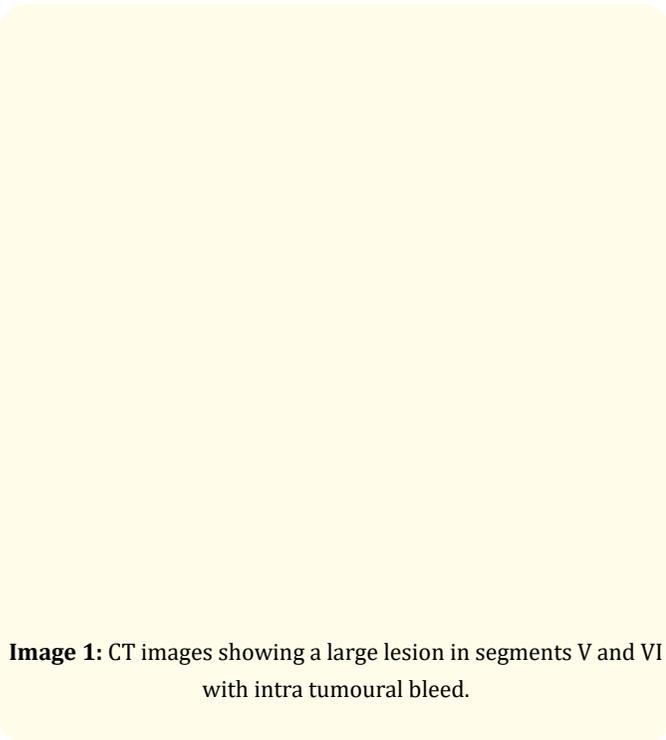


Image 1: CT images showing a large lesion in segments V and VI with intra tumoural bleed.

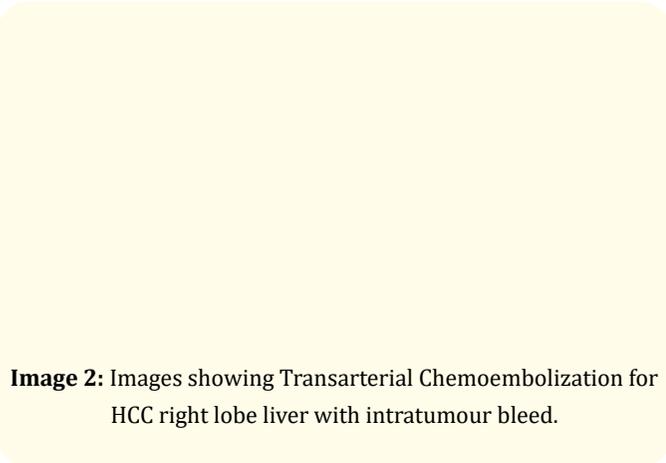


Image 2: Images showing Transarterial Chemoembolization for HCC right lobe liver with intratumour bleed.

Conclusion

The management guidelines for HCC remains same whether it is COVID or non COVID times. But an attack of COVID can have significant impact on borderline performance status and can alter the management, so do the side effects related to the treatment of the complications that occur during COVID. So rethink the treatment strategy ever time during the treatment pathway.

Bibliography

1. Siegel RL, *et al.* Cancer statistics. *CA Cancer J Clin* 70.1(2020): 7-30.
2. Chan SL and Kudo M. "Impacts of COVID-19 on Liver Cancers: During and after the Pandemic". *Liver Cancer* 9 (2020): 491-502.
3. Guan WJ, *et al.* "China Medical Treatment Expert Group for Covid-19. Clinical characteristics of coronavirus disease 2019 in China". *The New England Journal of Medicine* 382.18 (2020): 1708-1720.
4. Yang X, *et al.* "Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study". *The Lancet Respiratory Medicine* 8.5 (2020): 475-481.
5. Chen N, *et al.* "Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study". *Lancet* 395.10223 (2020): 507-513.
6. Huang C, *et al.* "Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China". *Lancet* 395.10223 (2020): 497-506.
7. Shi H, *et al.* "Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study". *The Lancet Infectious Diseases* 20.4 (2020): 425-34.
8. Wang D, *et al.* "Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China". *JAMA* 323.11 (2020): 1061-1069.
9. Xu XW, *et al.* "Clinical findings in a group of patients infected with the 2019 novel coronavirus (SARS-Cov-2) outside of Wuhan, China: retrospective case series". *BMJ* 368 (2020): m606.
10. Zhao D, *et al.* "A comparative study on the clinical features of COVID-19 pneumonia to other pneumonias". *Clinical Infectious Diseases* 71.15 (2020): 756-761.
11. Zhang C, *et al.* "Liver injury in COVID-19: management and challenges". *Lancet Gastroenterol Hepatol* 5.5 (2020): 428-430.

12. Wong SH., *et al.* "Covid-19 and the digestive system". *Journal of Gastroenterology and Hepatology* 35.5 (2020): 744-748.
13. Xu L., *et al.* "Liver injury during highly pathogenic human coronavirus infections". *Liver International* 40.5 (2020): 998-1004.
14. Genovese MC., *et al.* "Transaminase Levels and Hepatic Events During Tocilizumab Treatment: Pooled Analysis of Long-Term Clinical Trial Safety Data in Rheumatoid Arthritis". *Arthritis & Rheumatology* 69.9 (2017): 1751-1761.
15. Liang W., *et al.* "Cancer patients in SARS-CoV-2 infection: a nation wide analysis in China". *The Lancet Oncology* 21.3 (2020): 335-337.
16. Xia Y., *et al.* "Risk of COVID-19 for patients with cancer". *The Lancet Oncology* 21.4 (2020): e180.
17. Amaddeo G., *et al.* "Impact of COVID-19 on the management of hepatocellular carcinoma in a high-prevalence area". *Journal of High Energy Physics* 3.1.
18. M G., *et al.* "Impact of COVID-19 on Hepatocellular Carcinoma Management: A Multicountry and Region Study". *Journal of hepatocellular carcinoma* (2021).
19. Fix OK., *et al.* "Clinical Best Practice Advice for Hepatology and Liver Transplant Providers During the COVID-19 Pandemic: AASLD Expert Panel Consensus Statement". *Hepatology* 72 (2020): 287-304.
20. Boettler T., *et al.* "Care of patients with liver disease during the COVID-19 pandemic: EASL-ESCMID position paper". *Journal of Hepatology* 2 (2020): 100113.
21. Meyer T., *et al.* Management of HCC during COVID-19: ILCA guidance. ILCA (2020).
22. Shiina S., *et al.* "APASL practical recommendations for the management of hepatocellular carcinoma in the era of COVID-19". *Hepatology International* 14 (2020): 920-929.
23. Chagas AL., *et al.* "Management of Hepatocellular Carcinoma during the COVID-19 Pandemic - São Paulo Clínicas Liver Cancer Group Multidisciplinary Consensus Statement". *Clinics (Sao Paulo)* 75 (2020): e2192.

Assets from publication with us

- Prompt Acknowledgement after receiving the article
- Thorough Double blinded peer review
- Rapid Publication
- Issue of Publication Certificate
- High visibility of your Published work

Website: www.actascientific.com/

Submit Article: www.actascientific.com/submission.php

Email us: editor@actascientific.com

Contact us: +91 9182824667