

PEER-REVIEW REPORT

Name of journal: World Journal of Clinical Cases

Manuscript NO: 65427

Title: Increased Morbidity and Mortality of Hepatocellular Carcinoma Patients in Lower Cost of Living Areas

Reviewer's code: 03075520

Position: Peer Reviewer

Academic degree: MD, MSc

Professional title: Chief Doctor, Professor

Reviewer's Country/Territory: China

Author's Country/Territory: United States

Manuscript submission date: 2021-03-15

Reviewer chosen by: Man Liu

Reviewer accepted review: 2021-03-16 13:59

Reviewer performed review: 2021-03-25 09:46

Review time: 8 Days and 19 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input checked="" type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Reviewers' comments Manuscript ID:65427 Title:Increased morbidity and mortality of hepatocellular carcinoma patients in Lower Cost of Living Areas Comments: The incidence and mortality rates of hepatocellular carcinoma (HCC) are increasing in the United States. However, the rise among different racial and socioeconomic groups has not been homogeneous. Access to healthcare based on socioeconomic status and cost of living index (COLI), especially in the context of HCC management, is under-characterized. To investigate the relationship between the COLI and tumor characteristics, treatment modalities, and survival of HCC patients in the United States, a retrospective study of The Surveillance, Epidemiology, and End Results (SEER) database was conducted to identify patients with HCC from 2007 to 2015 by using site code C22.0, the International Classification of Disease for Oncology, 3rd edition (ICD-O-3) codes 8170-8173, and 8175. Cases of fibrolamellar HCC were excluded. Variables collected include demographics, cost of living indexes, insurance status, marital status, stage, treatment, tumor size, and survival data. Interquartile ranges for COLI were obtained, and based on this number, study populations were separated into four groups: COLI \leq 901, 902-1044, 1045-1169, \geq 1070. Chi-Square test was used to compare categorical variables, and Kruskal-Wallis test was utilized to compare continuous variables without normal distributions. Survival analysis was done by using the Kaplan-Meier survival curve. We defined $P < 0.05$ as statistically significant. The results showed that the authors identified 47,894 patients with HCC. Patients from the highest COLI areas were older (63 vs 61-years-old), more likely to be married (52.8 vs 48.0%), female (23.7 vs 21.1%) and of Asians and Pacific Islanders descent (32.7 vs 4.8%). These patients were more likely to have stage I disease (34.2 vs 32.6%), tumor size \leq 30 mm (27.1 vs 23.1%), received locoregional therapy (11.5 vs 6.1%), and undergone surgical resection (10.7 vs 7.0%)



**Baishideng
Publishing
Group**

7041 Koll Center Parkway, Suite
160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgooffice@wjgnet.com
https://www.wjgnet.com

when compared to the lowest quartile. The majority of patients with higher COLI resided in California, Connecticut, Hawaii, and New Jersey. Patients from lower COLI were more likely to be uninsured (5.7 vs 3.4%), have stage IV disease (15.2 vs 13%), and have received a liver transplant (6.6 vs 4.4%) when compared to patients from the highest COLI. The median survival increased with increasing COLI; 8 (95% CI 7-8), 10 (10-11), 11 (11-12), and 14 (14-15) months ($p < 0.001$) among COLI ≤ 901 , 902-1044, 1045-1169, ≥ 1070 , respectively. This survival trend was present after stratifying by year groups (2007-2009, 2010-2012, and 2013-2015). The data above suggest that there are racial and socioeconomic disparities in HCC. Patients from lower COLIs present with more advanced disease and increasing COLI is associated with improved median survival. Future studies should examine this further and explore ways to mitigate these differences. It is a topic of interest to the researchers in the related areas, but the paper needs a little improvements before acceptance for publication. My detailed comments are as follows: 1. the introduction, materials and methods in the paper work well, especially patients with a diagnosis of HCC were collected, a SEER database calculates COLI by utilizing a Family Budget Analysis done by Economic Policy Institute, COLI was elucidated based on family of two parents and one child to live in the county with a basic family expenditure such as housing, food, child care, transportation, health care, and taxes. 2. Results are good and the resolutions of the are high, but the part of discussion is not well discussed combined with results and references and should make some modifications. 3. The language is not fluent, suggesting that it should be edited by an English native editor. 4. The conclusion should be concise and only summarize the most important contribution of the research. 5. The few of references are not up-to-date, references of the last 10 years should be cited, please cite last 10 years references, especially references for the last 5 years. Pelase make a little revisions, espically in the part of discussion, conclusions, references and language-editing. After



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160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgoffice@wjgnet.com
https://www.wjgnet.com

making a little revisions,the paper may be considered for publication.