




Letter to the Editor

# Comparison between Liver Cancer Mortality Rates in China and Spain



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Dear Editors,

We have read with interest the article by Liu H *et al.*<sup>1</sup> published in your journal regarding liver cancer mortality in China and would like to compare it with that of our country, Spain, which is a European and Mediterranean country with a population of 48 million inhabitants.

In Spain, the most frequently diagnosed cancers in 2024 are expected to be those of the colon and rectum, followed by breast, lung, prostate, and urinary bladder cancers. These are followed by non-Hodgkin's lymphoma, pancreatic cancer, kidney cancer, oral cavity and pharynx cancers, uterine corpus cancers, stomach cancer, and liver cancer. The expected frequency in 2024 is similar to that of 2020.<sup>2</sup> When compared with the incidences of cancers globally in 2020, it is evident that liver cancer has a lower incidence in Spain.<sup>3</sup>

The cancers responsible for the highest number of deaths worldwide were lung cancer (18.2% of all cancer deaths), colorectal cancer (9.5%), liver cancer (8.4%), stomach cancer (7.8%), and breast cancer (6.9%). As for liver cancer mortality in Spain in 2022, it was in 6th position,<sup>2</sup> and in previous years, it was in a similar position. This contrasts with China, where liver cancer was the 2nd leading cause of cancer death.<sup>4</sup>

Table 1 and Figure 1 show the results of liver cancer mortality in Spain from 2008 to 2020, by sex and total population each year.<sup>5</sup> In 2020, there is a significant difference compared to the mortality rate found in China, which is 25.57 per 100,000 inhabitants;<sup>1</sup> Spain's rate is 2.4 times lower. One of the most effective strategies for preventing hepatocellular carcinoma is the hepatitis B vaccine. Spain was one of the first countries to implement a universal immunization plan in 1991.<sup>6</sup> China also started a nationwide vaccination program in 1992; however, from 1973 to 1984, the prevalence of hepatitis B virus was 9.6%. As a result, in 2021, the prevalence dropped to around 3%. However, among high-risk groups, it remains high at over 5% and

varies throughout the country, making China have the highest viral load of hepatitis B virus in the world.<sup>7</sup> This contrasts with Spain, where, according to last year's data, the prevalence of hepatitis B virus was 1%, with around 500 cases per year, often due to faulty vaccination in childhood.<sup>8</sup> Therefore, one key to the difference in the mortality rate may be related to prevalence.

Table 2 and Figure 2 show the mortality rate by age group in Spain in 2022, indicating that as age increases, the mortality rate is higher,<sup>5</sup> similar to trends in China.<sup>1</sup> If we compare the data on mortality rates in Table 1 with the mortality rate by age group in Table 2, we can see that it is higher in men.<sup>5</sup> Risk factors for liver cancer include excessive alcohol consumption, smoking, viral or autoimmune hepatitis, congenital liver disease, medication, or non-alcoholic fatty liver disease.<sup>9</sup> Among these, alcohol consumption and smoking are more prevalent in men in Spain,<sup>5</sup> as in China.<sup>1</sup>

Regarding population distribution, in Spain, all autonomous communities and regions have a mortality rate of around 10 per 100,000 inhabitants, similar to those shown in Table 1,<sup>5</sup> unlike China, where the rate was higher in rural

**Table 1. Mortality rate per 100,000 inhabitants from 2008 to 2020 by sex and total mortality rate in Spain<sup>5</sup>**

Year	Mortality rate per 100,000 inhabitants in men	Mortality rate per 100,000 inhabitants in women	Total mortality rate per 100,000 inhabitants
2020	14.7	6.64	10.6
2019	15.57	6.52	11.03
2018	15.53	6.57	10.96
2017	15.69	6.78	11.15
2016	14.95	6.67	10.74
2015	15.14	6.72	10.86
2014	14.87	7	10.87
2013	14.68	6.63	10.59
2012	14.65	6.89	10.72
2011	14.33	6.78	10.52
2010	13.62	6.9	10.24
2009	13.13	6.84	9.95
2008	13.2	6.62	9.88

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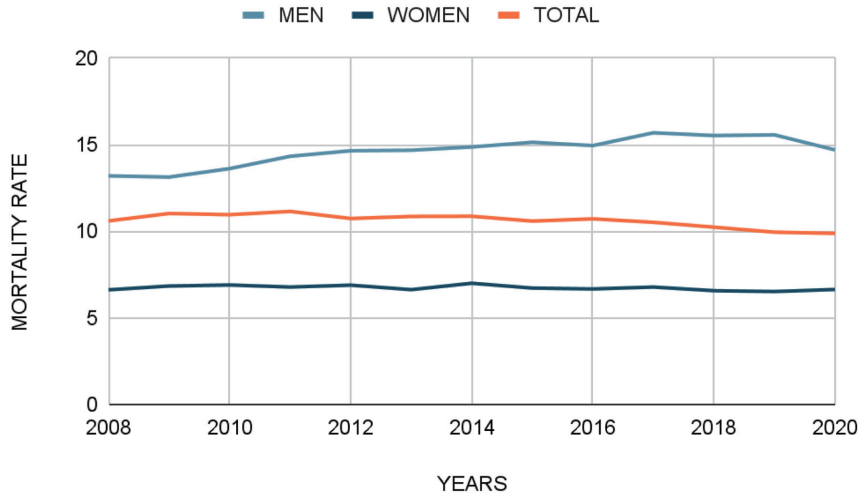


Fig. 1. Mortality rate per 100,000 inhabitants from 2008 to 2020 by sex and total mortality in Spain.<sup>5</sup>

Table 2. Mortality rate per 100,000 inhabitants in 2022 by age and sex in Spain<sup>5</sup>

Years	Mortality rate × 100,000 inhabitants in men	Mortality rate × 100,000 inhabitants in women
15–19 years old	0.077	0
20–24 years old	0.08	0
25–29 years old	0.389	0
30–34 years old	0.361	0.14
35–39 years old	0.575	0.19
40–44 years old	0.935	0.47554
45–49 years old	1.93	0.845
50–54 years old	7.915	2.085
55–59 years old	19.18	5.075
60–64 years old	31.53	7.72
65–69 years old	41.996	10.478
70–74 years old	58.32	13.28
75–79 years old	67.78	23.86
80–84 years old	84.11	33.82
85–89 years old	87.9	47.06
90–94 years old	104.65	52.035
>95 years old	74.45	43.67

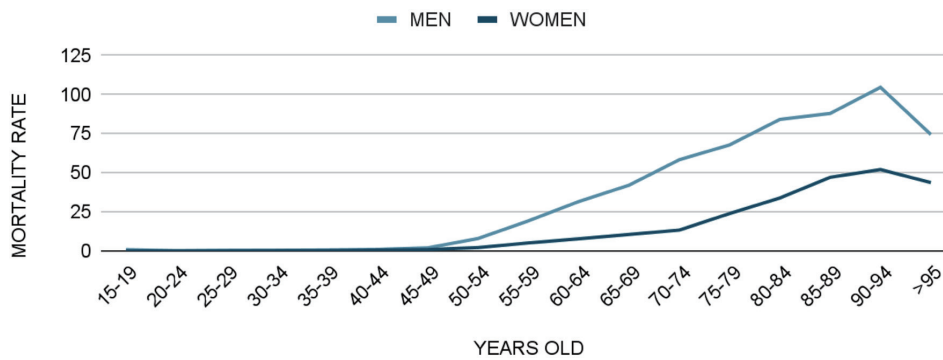


Fig. 2. Mortality rate per 100,000 inhabitants in 2022 by age and sex in Spain.<sup>5</sup>

areas.<sup>1</sup>

In conclusion, liver cancer is one of the most deadly cancers globally, especially in men, and it is vitally important to effectively manage risk factors, with hepatitis B vaccination being one of the most effective tools.

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### Conflict of interest

The authors have no conflict of interests related to this publication.

### Author contributions

Study design: JGC, JI; Data collection: JGC, INEP; Manuscript writing: JGC, GM; Supervision: JI. All authors have approved the final version and publication of the manuscript.

### References

[1] Liu H, Wang X, Wang L, Yin P, Liu F, Wei L, *et al*. Mortality Burden of Liver Cancer in China: An Observational Study From 2008 to 2020. *J Clin*

*Transl Hepatol* 2024;12(4):371–380. doi:10.14218/JCTH.2023.00455, PMID:38638380.

- [2] Spanish society of oncology: The cancer figures in Spain [Internet]. Spanish society of oncology;2024. Available from: [https://www.seom.org/images/LAS\\_CIFRAS\\_2024.pdf](https://www.seom.org/images/LAS_CIFRAS_2024.pdf).
- [3] Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, *et al*. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA Cancer J Clin* 2021;71(3):209–249. doi:10.3322/caac.21660, PMID:33538338.
- [4] Cao W, Chen HD, Yu YW, Li N, Chen WQ. Changing profiles of cancer burden worldwide and in China: a secondary analysis of the global cancer statistics 2020. *Chin Med J (Engl)* 2021;134(7):783–791. doi:10.1097/CM9.0000000000001474, PMID:33734139.
- [5] Stats National Institute of Spain [Internet]. Stats National Institute. Available from: <https://www.ine.es>.
- [6] Pattyn J, Hendrickx G, Vorsters A, Van Damme P. Hepatitis B Vaccines. *J Infect Dis* 2021;224(12 Suppl 2):S343–S351. doi:10.1093/infdis/jiaa668, PMID:34590138.
- [7] Liu Z, Lin C, Mao X, Guo C, Suo C, Zhu D, *et al*. Changing prevalence of chronic hepatitis B virus infection in China between 1973 and 2021: a systematic literature review and meta-analysis of 3740 studies and 231 million people. *Gut* 2023;72(12):2354–2363. doi:10.1136/gutjnl-2023-330691, PMID:37798085.
- [8] Ministry of health: Vaccines and vaccination programs [Internet]. Ministry of health;2024. Available from: <https://www.sanidad.gob.es/areas/promocionPrevenicion/vacunaciones/enfermedades/profesionales/hepatitisB.htm#:~:text=%C2%BFcu%C3%A1l%20es%20la%20situaci%C3%B3n%20epidemiol%C3%B3gica,vacunadas%20correctamente%20en%20la%20infancia>.
- [9] Juanola O, Martínez-López S, Francés R, Gómez-Hurtado I. Non-Alcoholic Fatty Liver Disease: Metabolic, Genetic, Epigenetic and Environmental Risk Factors. *Int J Environ Res Public Health* 2021;18(10):5227. doi:10.3390/ijerph18105227, PMID:34069012.