Hepatocellular carcinoma statistics in South Korea

Young Eun Chon1, Soung Won Jeong2, Dae Won Jun3

1Department of Internal Medicine, CHA Bundang Medical Center, CHA University, Seongnam;
2Department of Internal Medicine, Soonchunhyang University College of Medicine, Seoul;
3Department of Internal Medicine, School of Medicine, Hanyang University, Seoul, Republic of Korea.

Corresponding author

Dae Won Jun, M.D., Ph.D.
Department of Internal Medicine, School of Medicine, Hanyang University
222-1, Wangsimni-ro, Seongdong-gu, Seoul, 04763, Republic of Korea
Tel:+82-2-2290-8338; Fax: +82-2-2298-9183; E-mail: noshin@hanyang.ac.kr
Primary liver cancer is the sixth most common cancer worldwide and in South Korea (fifth in men and sixth in women).\textsuperscript{1,2} Hepatocellular carcinoma (HCC) accounts for the majority of primary liver cancer.\textsuperscript{3} Considering the high incidence and the poor prognosis of HCC, the research on the epidemiology of HCC in Korea is an important public health issue.\textsuperscript{4} The Korean Association for the Study of the Liver has recently published ‘2021 Hepatocellular Carcinoma Factsheet in Korea’ to provide comprehensive information on HCC in Korea including incidence, etiology, comorbidities of HCC.\textsuperscript{5} Here in this Snapshot, we report the recent 10 years of incidence of HCC in South Korea, based on the data of ‘2021 Hepatocellular Carcinoma Factsheet in Korea’.

The 2021 Hepatocellular Carcinoma Factsheet in Korea used the data of HCC patients enrolled in Korean National Health Insurance Service Database. HCC diagnosis was made upon patients having both C220 (International Classification of Diseases code) and V193 (rare incurable disease code). In 2018, HCC was newly diagnosed in 11,234 patients (8,777 in male and 2,457 in female). A crude rate (CR) of HCC incidence was 21.2 per 100,000 person-years (33.1 per 100,000 person-years in male and 9.3 per 100,000 person-years in female). An age-standardized rate of HCC incidence was as 13.9 per 100,000 person-years (21.6 per 100,000 person-years in male and 6.2 per 100,000 person-years in female). According to the data of Statistics Korea, the CR of liver cancer incidence was 30.7 per 100,000 person-years (45.8 per 100,000 person-years in male and 15.6 per 100,000 person-years in female).\textsuperscript{2} The difference from our data is believed to be that the data of Statistics Korea included other liver cancers such as intrahepatic cholangiocellular carcinoma (C221), hepatoblastoma (C222), and etc. in addition to HCC. The number one cancer incidence in 2018 was stomach cancer (CR, 57.1 per 100,000 person-years), followed by thyroid cancer (55.8 per 100,000 person-years) and lung cancer (55.8 per 100,000 person-years). The liver cancer ranked sixth (30.7 per 100,000 person-years), the seventh prostate cancer rate was 29.0 per 100,000 person-years, and the eighth pancreatic cancer rate was 14.8 per 100,000 person-years. Therefore, not only the CR incidence of liver cancer, but also the CR incidence of pure HCC of our study (21.2 per 100,000 person-years), is higher than that of pancreatic cancer, ranking seventh.

The CR of HCC incidence in 2018 was depicted according to age groups. The CR was the
highest among aged 60-79 patients (87.2 per 100,000 person-years in age 60-69 group and 87.3 per 100,000 person-years in age 70-79 group). The second and the third highest incidence rate groups are patients aged 80 years or older (115.7 per 100,000 person-years) and patients aged 50-59 (96.9 per 100,000 person-years), respectively. In patients under aged 30, the CR was lower than 1 per 100,000 person-years. According to the 2018 Statistics Korea data, liver cancer was not in the top five for patients under 64 years, but liver cancer ranked fifth among patients older than 65 years after lung, colon, stomach and prostate with the CR of that age 109.3 per 100,000 person-years.\textsuperscript{2} Compared to other cancers, HCC has a relatively high incidence rate in old age.

This Snapshot shows the change of CR of HCC incidence during 10 years (from 2008 to 2018). CR of HCC incidence maintained similarly from 23.9 per 100,000 person-years in 2008 to 21.2 per 100,000 person-years in 2018, the change of which was statistically insignificant (average percent change, -0.94%; \( P=0.640 \)). The CR of male was 37.3 per 100,000 person-years in 2008, and 33.1 per 100,000 person-years in 2018. The CR of female was 10.5 per 100,000 person-years in 2008, and 9.3 per 100,000 person-years in 2018. Neither of the changes of CR during 10 years in both gender showed significant difference. Despite the decreasing trend in the incidence of HCC cases during 10 years (12,056 in 2008 \( \rightarrow \) 11,234 in 2018; average percent change, -0.42%; \( P<0.001 \)), CR maintenance may be due to the aging of our society, which was more pronounced in the age group analysis. Changes of CR of HCC incidence during 10 years according to age groups were analyzed. In all age groups except for 80 years or older, CR decreased from 2008 to 2018. However, in patients with 80 years or older, the CR increased significantly during 10 years (58.5 per 100,000 person-years in 2008 \( \rightarrow \) 64.6 per 100,000 person-years; average percent change, 1.4%; \( P<0.001 \)). The difference of HCC incidence among age groups and the increasing trends of HCC among old age seem consistent in other countries. In Taiwan (from 2003 to 2011), incidence of HCC patients older than 65 significantly increased with an annual percent change of 1.3%, whereas HCC patients aged under 64 showed reducing trend of HCC incidence.\textsuperscript{6} In the United States from 1992 through 2015, the incidence of HCC was decreasing among younger and middle-aged adults regardless of sex, race, or ethnicity.\textsuperscript{7}
HCC incidence in 2018 ranked as 7th commonest cancer in South Korea, and the crude incidence has not decreased over the past 10 years. HCC is often diagnosed at an advanced stage compared to other cancers, and therefore has a worse prognosis. However, when HCC occurs in the elderly, it is more difficult to treat due to their frailty, and these patients become a great social burden in an aging society. Future strategies to reduce the HCC incidence in entire population as well as in elderly patients and to provide proper age-specific treatment should be prepared.

References