EE 289

Cost of Hepatocellular Carcinoma in Türkiye: Results of a Delphi Panel Analysis

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INTRODUCTION

Liver cancer is the sixth most commonly diagnosed cancer in the world with third place in cancer related deaths and hepatocellular carcinoma (HCC) accounts for 75-80% of liver cancers[1]. According to GLOBOCAN data, there were 905,677cases of liver cancer in 2022[1]. In Türkiye, GLOBOCAN data shows that 5,469 new cases of liver cancer are diagnosed annually accounting for 2.4% of all new cancer cases[2]. According to Ministry of Health statistics, the age standardized frequency of liver cancer is 3.9/100,000 for males and 1.6/100,000 for females[3]. A recent study[4] aimed to elaborate on the characteristics of HCC patients in Türkiye by analyzing data from 547 patients treated in 25 gastroenterology and oncology clinics. The mean age at diagnosis was 62.6 years (range, 19 to 92 years, 72.5% aged 40-69 years) and 81.6% of patients were male. 68.2% of the patients had HBV and 17.2% had HCV.

OBJECTIVES

This study aims to estimate the financial burden of HCC on the Social Security Institution (SSI) of Türkiye.

METHODS

A Modified Delphi Panel approach was used to estimate the costs. A Healthcare Resource Use Questionnaire was designed to cover the type, patient percentage and frequency of resources used for outpatient, inpatient and emergency care of HCC. The questionnaire was sent to 12 experts (one general surgeon, one hepatologist and ten medical oncologists) .with clear instructions to be filled out independently. The experts were as sent to a panel of selected by purposeful sampling. Following this initial round, researchers analyzed all responses, calculated averages and created a draft consensus document for discussion during a face-to-face meeting. Healthcare resources were priced according to the SSI's reimbursement rules and guidelines. After identifying the unit costs of all tests, procedures and drugs, this unit costs were multiplied by the percentage of patients and frequency of the resource use. During the face-to-face meeting all responses were reviewed and a final consensus was reached. Once the form was finalized, annual per patient costs for treating of resectable and unresectable HCC were calculated. The total cost of HCC to the SSI was estimated using epidemiological data provided by the experts.

RESULTS

We asked general questions about HCC in Türkiye in order to understand the overall perspective of the disease and gather the necessary data for nationwide estimates.

Table 1: Overview of HCC in Türkiye

HCC Prevalence in Türkiye	7/100,000
HCC Incidence in Türkiye	3/100,000
Distribution of HCC patients by BCLC criteria at diagnosis	
A	25%
B	40%
C	27%
D	8%

BCLC: Barcelona Clinic Liver Cancer, HCC: Hepatocellular Carcinoma

The prevalence and incidence of HCC were reported as 7 per 100,000 and 3 per 100,000 respectively. The Turkish Statistics Institute has estimated the population for 2024 to be 87,886,000. Therefore, it is estimated that there are 6.152 HCC patients in Türkiye.

Table 2: Annual cost per patient for unresectable HCC in Türkiye

	Cost (TRY)
Outpatient care	
Healthcare services	11,239
First line oncologic drugs	962,863
Second line oncologic drugs	401,809
Other drugs	16,519
Total outpatient first line	990,621
Total outpatient second line	429,567
Inpatient care	
Healthcare services	11,810
Drugs	26,719
Total inpatient care	38,529
Emergency care	11,458
Intensive care	15,788
Total annual cost per patient for first line treatment	1,056,396
Total annual cost per patient for second line treatment	495,342

Table 3: Annual cost per patient for resectable HCC in Türkiye

	Cost (TRY)
Outpatient care	
Healthcare services	2,600
Drugs	12,629
Total outpatient care	15,230
Inpatient care	
Healthcare services	976
Drugs	755
Total inpatient care	1,732
Emergency care	1,652
Total annual cost per patient	18,614

Based on the experts' opinions and population statistics, it is projected that there will be 6,152 patients with HCC in Türkiye. Of these, 3,876 will have unresectable cases, while 2,276 will have resectable cases. The experts have determined that 70% of unresectable patients receive outpatient treatment as first line treatment (2,713 patients) while 30% receive second line treatment (1,163 patients). Additionally, it was found that 40% of patients receive inpatient care, 20% receive intensive care and 80% receive emergency care. These percentages were used to estimate the number of patients in each state. Table 4 outlines the total costs of HCC to the SSI in Türkiye.

Table 4: Annual Total Cost of Unresectable HCC Patients to the SSI in Türkiye

	Number of Patients	Cost per Patient (TRY)	Total Cost (TRY)
Diagnosis	3,876	801	3,103,910
Outpatient first line	2,713	693,434	1,881,315,897
Outpatient second line	1,163	128,870	149,841,116
Inpatient	1,550	38,529	59,731,914
Intensive care	775	5,788	12,238,348
Emergency	3,101	11,458	35,526,366
		Total	**2,141,757,551**

The experts have concluded that 10% of resectable patients receive inpatient care and 15% visit emergency care after resection. Table 5 presents the annual cost of resectable HCC cases to the SSI after resection.

Table 5: Annual Total Cost of Resectable HCC Patients to the SSI in Türkiye

	Number of Patients	Cost per Patient (TRY)	Total Cost (TRY)
Diagnosis	2,276	801	1,822,932
Outpatient	2,276	15,230	34,667,430
Inpatient	228	1,732	394,322
Emergency	341	580	197,925
		Total	**37,082,609**

CONCLUSION

In 2023, the total healthcare spending of the SSI was 553,143,000,000TRY[5]. The share of HCC spending in the budget is 0.4%.

References

[1] Sung H, Ferlay J, Siegel RL, Laversanne M et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. CA Cancer J Clin. 2021;71:209–49.
[2]Globocan. Turkey Cancer Fact Sheet [Internet]. 2020 [cited 2023 Oct 24]. Available from: https://gco.iarc.fr/today/data/factsheets/populations/792-turkey-fact-sheets.pdf.
[3] Sağlık Bakanlığı. Türkiye Kanser İstatistikleri. Ankara: Sağlık Bakanlığı; 2022.
[4] Akarca US, Ünsal B, Sezgin O, Yalçın K et al. Characteristics of Newly Diagnosed Hepatocellular Carcinoma Patients Across Turkey: Prospective Multicenter Observational 3K Registry Study. Turk J Gastroenterol. 2021;32(12):1019–28.
[5] Sosyal Güvenlik Kurumu. Sosyal Güvenlik Kurumu Faaliyet Raporu 2023. Ankara; 2024.

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