

Brain metastases from hepatocellular carcinoma: prognostic factors and outcome

Brain metastasis from HCC

Hye Jin Choi · Byung Chul Cho · Joo Hyuk Sohn · Sang Jun Shin · Se Hyun Kim · Joo Hang Kim · Nae Choon Yoo

Received: 26 June 2008 / Accepted: 1 October 2008
© Springer Science+Business Media, LLC. 2008

Abstract Brain metastases from hepatocellular carcinoma are extremely rare. The objectives of the current study were to assess the natural history, outcome, and possible prognostic factors in patients with brain metastases from hepatocellular carcinoma. Between 1995 and 2006, 6,919 patients with hepatocellular carcinoma were treated at Yonsei University Health System. Of those, 62 (0.9%) had a diagnosis of brain metastasis. We carried out a retrospective review of these 62 patients and performed a statistical analysis. The median age at the time patients were diagnosed with brain metastasis was 54 years. Forty-seven patients (76%) were male, and 53 patients had hepatitis B. Median time from diagnosis of hepatocellular carcinoma to brain metastasis was 18.2 months, and 5 patients had brain involvement as their initial presentation. Intracranial hemorrhage was frequently associated (54.8%) with brain metastasis. The most common presenting symptoms were motor weakness, mental change, and headache. Metastases were treated with whole-brain radiation therapy (WBRT) alone in 17 patients and gamma knife surgery alone in 10 patients. Six patients underwent surgical resection and 5 patients were treated with surgical resection followed by WBRT. Twenty-four patients (39%) received steroids only. Median survival after diagnosis of brain metastasis was 6.8 weeks (95% confidence interval: 3.8–9.8 weeks). Univariate analysis showed that treatment modality, number of brain lesions, α -fetoprotein, ECOG performance score, recursive partitioning analysis (RPA)

class, and Child-Pugh classification had a statistically significant impact on survival. In multivariate analysis, treatment modality, number of brain lesions, and Child-Pugh classification were statistically significant prognostic factors for survival. The overall prognosis of patients with brain metastases from hepatocellular carcinoma is extremely poor. Nevertheless, some subsets of patients manifested the most favorable survival criteria (single brain metastasis and good liver function); thus, for at least these patients, treatment may result in an improved survival time.

Keywords Brain metastasis · Hepatocellular carcinoma · Prognostic factor

Introduction

Hepatocellular carcinoma (HCC) is one of the most common cancers in the world and its incidence is increasing [1, 2]. Because Korea is an area of endemic Hepatitis B virus, HCC is the third most common cancer and the third cause of cancer deaths in Korea [3].

Brain metastases are the most common intracranial neoplasm in adults and represent an important cause of morbidity and mortality [4]. The number of brain metastases that are detected pre-mortem is increasing due to improvements in modern neuroimaging modalities that can detect small metastases in asymptomatic patients. The prognosis for these patients is very poor, but efforts to improve survival are currently under active investigation.

Over the past two decades, some therapeutic advances have been made in the management of HCC. Surgical techniques and new methods, such as percutaneous ethanol injection (PEI) and transarterial chemoembolization

H. J. Choi · B. C. Cho · J. H. Sohn · S. J. Shin · S. H. Kim · J. H. Kim · N. C. Yoo (✉)
Division of Oncology, Yonsei Cancer Center, Yonsei University College of Medicine, Seodaemun-gu shinchon-dong 134, Seoul, Korea
e-mail: ync0011@yuhs.ac