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The toxicological issue of natural compounds in cancer therapy

Jee Young Lee
Kyung Hee University Hospital at Gangdong, Republic of Korea

Statement of the Problem: Patients undergoing cancer therapy should consider adverse drug reactions including drug-induced liver injury (DILI). This consideration was not only applied to the major chemotherapies but natural compounds including herbs and health functional foods. Approximately 9-10% of DILI cases in the United States and 11% in Spain were suspicious to be cases of Herbal drug-induced liver injury (HILI). Natural compounds in cancer therapy have been broadly used worldwide. However, safety issues related to the natural compounds in cancer patients were controversial. The purpose of this study was aimed to report 10 years of experience of single-center about the risk of HILI in cancer patients.

Methodology & Theoretical Orientation: A retrospective chart review was performed at the Korean medicine cancer center in the Republic of Korea. This study only included inpatients that received herbal drugs for any reason and performed liver function tests at the administration and the discharge moment. Liver function tests measured serum albumin, total bilirubin, aspartate transaminase (AST), alanine transaminase (ALT), gamma-glutamyl transpeptidase (rGT), alkaline phosphatase (ALP) and prothrombin time with the international normalized ratio (PT INR). The inclusion criteria were as follows: (1) Age of 19 and older, (2) Hospital stays longer than 3 days, (3) Administration of herbal drugs during hospitalization periods. Patients with the following criteria were excluded: (1) Presence of bile duct obstruction or liver failure including terminal stage of liver metastases, (2) Inhibition of oral intake including herbal drug for any reason, (3) Initiation of conventional drugs such as chemotherapeutic drugs, antibiotics, and steroids. HILI was assessed according to the RUCAM score.

Findings: Median duration of the follow-up period was 12 days (range 3-111 days). Patients with cancer experienced a decrease of albumin (3.8±0.05 to 3.6±0.05, p=0.001) and a decrease of alanine transaminase (ALT) (26.3±2.1 to 24.7±1.7, p=0.043) with statistical difference. Total bilirubin, aspartate transaminase (AST), gamma-glutamyl transpeptidase (rGT), and alkaline phosphatase (ALP) showed no significant change during the hospitalization periods. Peak ALT was 30.7±2.3. One case of HILI was identified with 4 as possible based on the RUCAM score, with hepatocellular reaction type and presented <4 fold increase of ALT. The patient was recovered after the cease of the herbal drug.

Conclusion and Significance: The incidence of HILI in cancer patients presented one case and manifested hepatocellular type by RUCAM criteria. Since the concurrent use of conventional drugs was excluded from this study, further studies would focus on the toxicity issue in the situation of herbal drug interaction with conventional drugs.

Biography

Jee Young Lee has her expertise in clinical management of supportive care with Korean medicine in patients with cancer.

happiade@daum.net

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