Predisposing factors associated with chemotherapy toxicity in elderly cancer patients: A prospective study

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Background: The population of older adults is growing these days. Also, cancer incidence in this population has dramatically increased. Existing performance status as a tool for predicting toxicity and survival in all adult cancer patients may not be adequate for elderly because of different physiology and body reserve. Geriatric assessment might be a potential tool predicting elderly who is not suitable for chemotherapy with high chance of severe toxicity.

Objective: The aim of the study was to assess predisposing factors associated with severe chemotherapy toxicity as well as dose modification in aging cancer patients.

Method: Cancer patients with > 70 years of age who planned to receive first cycle of chemotherapy were enrolled in this prospective study. On the day of starting chemotherapy, demographic data, performance status (PS), and geriatric assessment (comorbidity index, nutritional status, cognitive function and frailty) were collected. Adverse effects (AE) and chemotherapy modification were recorded. Quality of life (QOL) was assessed at baseline and 3 months after starting chemotherapy or at the end of chemotherapy.

Results: There are 151 patients with a mean age of 76.4 years with GI (47%), lung (24%), breast (9%), GU (6%) cancer were enrolled in the study. All grade and severe AE occurred in 83% and 42% of the patients, respectively. 78 patients (51.6%) required chemotherapy modification due to toxicities. Higher severe AE rate (71% vs 39%, p=0.01) and worsen QOL was found in patients with PS2 than those with PS 0-1. Patients with PS 2 or who received palliative-intent chemotherapy or multiple comorbidities experienced more toxicity-related chemotherapy discontinuation.

Conclusions: Performance status remained the key to predict chemotherapy toxicity in elder patients. PS 2 related with higher incidence of severe AE, premature treatment discontinuation and worsen QOL.