Evaluation of the nurse clinic program for preventing infection of patients with chemotherapy induced neutropenia (CIN)

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Keywords:
chemotherapy induced neutropenia
Infection prevention
patient education
nurse clinic

Introduction
Neutropenia is defined as an absolute neutrophil count (ANC) of less than 1.5 x 10^9/L. It is a common and potentially dangerous side effect in patients receiving chemotherapy and may lead to higher risk of infection (Polovich, Olsen & LeFebvre, 2014). The goal of neutropenia management is to prevent infection by providing patients with information, education, advocacy and support. A program to support patients with chemotherapy induced neutropenia (CIN) has been started in nurse clinic since October 2012. Patients who first time developed CIN were provided with individualized neutropenia assessment and education. A total of 223 patients with CIN were recruited to the program between October 2012 and August 2014. Patient’s physical, psychological, social and environmental aspects were assessed to identify any existing infection risk factors. Infection control measures based on the identified risk factors were discussed with patient and their families. A weekly follow-up was provided to patient till patient’s neutrophil counts returned to normal (ANC > 1.5 x 10^9/L).

Objectives
1. To evaluate the effectiveness of the program for preventing infection of patients with chemotherapy induced neutropenia
2. To evaluate the patients’ compliance and competency in prevention of infection in neutropenia period.

Methodology
Patients’ records from March to August 2014 were reviewed to identify any infection which may happen. Their OMAHA knowledge and behavior score on the preventive measures of infection were calculated.
Result
From March to August 2014, 55 patients, who first time developed CIN and required to suspend chemotherapy, were recruited in the program. Total 114 follow ups were made among them. Their ANC counts was ranged from 0.5 to 1.4 x 10^9/L on the day of first consultation in nurse clinic. 91% and 9% of their neutrophil count returned to normal (ANC > 1.5 x 10^9/L) after first week and second week follow up respectively. 100% of them were free from infection in their neutropenia period and could proceed to next cycle chemotherapy after ANC returned to normal. The average OMAHA knowledge score and behavior score of patients on prevention of infection increased from 2.87 to 3.96 and 2.84 to 3.80 respectively after first consultation in nurse clinic. The program was effective in preventing infection of patients with CIN. It also improved patients' coping strategies on the management of CIN.