Poster Workshop (PWSF): ‘Febrile neutropenia’

**PWSF2 – FEBRILE NEUTROPENIA (FN) AND D-INDEX**

Michinobu Yoshimura, Yosuke Ikari, Hiroo Katsuya, Atsushi Togawa, Toshitaka Goto, Toshhiro Tanaka, Kenji Ishitsuka, Tohru Takata, Yasushi Takamatsu, Kazuo Tamura

The Department of Medicine, Division of Medical Oncology, Hematology and Infectious Diseases School of Medicine, Fukuoka University

**Background:** Prolonged neutropenia due to chemotherapy is a risk for invasive mold infection. Neutropenia is generally evaluated in terms of duration. In 2009, Portugal RD et al developed D-index, which enabled the estimation of the severity and duration of neutropenia at the same time. We, therefore, aimed to estimate the duration and severity of neutropenia in patients with febrile neutropenia (FN) by D-index.

**Methods:** A retrospective study was performed involving 24 patients with FN who received chemotherapy for acute myeloid leukemia from April 2003 through December 2010. We compared the D-index of invasive pulmonary mold infection (IPMI) patients (patient group) with that of the patients (control group) who did not have this infection. IPMI was diagnosed based on MSG/EORTC criteria. We calculated a cumulative D-index (c-D-index) from the start of neutropenia until the diagnosis of mold infection made by CT scan.

**Results:** Nine cases were diagnosed to have IPMI (probable 5, possible 4) (hereinafter referred to as patients) while 15 did not have this infection (hereinafter referred to as controls). The median duration of neutropenia and D-index value were 21 days and 9265 for the patient group, and 17 days and 7283 for the control group, respectively. The c-D-index of the patient group was 5992. We analyzed the data using Receiver operating characteristic curves for all patients with neutropenia. In this case the area under the curve (AUC) for D-index and c-D-index were 0.68 and 0.47, respectively and these were low. We then performed the same analysis for patients excluding possible IPMI. The AUC for D-index and c-D-index were 0.84 and 0.70, and negative predictive value were 100% and 94-98%, for a cutoff point of 8770 and 8185, respectively.

**Conclusion:** Our study suggests that D-index is useful in excluding invasive pulmonary mold infection. When the D-index or the c-D-index is lower than 8770 or 8185, we can estimate that the patient is unlikely to have IPMI.