Levofloxacin to Prevent Bacterial Infection in Patients with Cancer and Neutropenia

Background:
The prophylactic use of fluoroquinolones in patients with cancer and neutropenia is controversial and is not a conventional intervention. The aim of this study was to clarify this issue at a teaching hospital in South Taiwan.

Patients and Methods:
Patients were included if they met the following criteria: adult outpatients with cancer in whom chemotherapy-induced neutropenia (absolute neutrophil count (ANC) < 1000/μL) to receive oral levofloxacin (500 mg daily) from the onset of neutropenia until the resolution of neutropenia. Most patients were received G-CSF 250 μg SC daily for 3 days. All patients were self-isolation at home and followed at OPD during neutropenia. The primary endpoint of the study was the occurrence of fever requiring empirical antibacterial therapy during neutropenia. Secondary endpoints were the type and the number of documented infections, survival at the resolution of neutropenia, compliance, and tolerability. Patients were carefully monitored for side effects, and all adverse events were reported.

Results:
From January of 2005 to December of 2005, there were totally 32 patients (13 males and 19 females) included and observed. The median age of these patients was 48 (range 20-85). The mean WBC count was 1190 (range 270-2220). The mean neutrophil count was 277 (range 37-805). The mean duration of neutropenia was 8.9 days (range 1-29). The mean duration of levofloxacin use was 8.4 days (range 3-29). Response rates (freedom from fever) on day 7, day 14 and day 30 were 100% (32/32), 100% (32/32) and 93.8% (30/32). 1 patient developed protracted neutropenia and died due to severe pneumonia. Adverse effects were minimal. Only 2 patients had mild elevation of liver function test but not direct related to levofloxacin.

Conclusions:
Prophylactic treatment with levofloxacin is an effective and well-tolerated way of preventing febrile episodes and other relevant infection-related outcomes in patients with cancer and neutropenia. The long-term effect of this intervention on microbial resistance in the community is not known.

Key words: levofloxacin, bacterial infection, neutropenia.