Efficacy of Posaconazole Oral Suspension in Prevention and Treatment of Invasive Fungal Infections in Siriraj Hospital

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Background: A second-generation triazole, posaconazole, has been used for prophylaxis and treatment for fungal infections in high risk individuals. However, the efficacy of posaconazole has never been evaluated in Thai patients with higher prevalence of invasive fungal diseases.

Objective: To evaluate the efficacy of posaconazole oral suspension in prevention and treatment of invasive fungal diseases in Siriraj Hospital.

Methods: We retrospectively reviewed medical records of patients admitted at Siriraj Hospital, who were prescribed posaconazole for either prophylaxis or treatment, from January 2010 to December 2016. Clinical characteristics, breakthrough infections and treatment outcomes were analyzed.

Results: There were 80 patients enrolled in this study. A total of 71 patients received posaconazole for prophylaxis and all of them had hematologic malignancies with neutropenia. Among 9 patients who received posaconazole for treatment of invasive fungal diseases, 4 had diabetes mellitus and the other 4 had hematologic malignancies. In those with prophylaxis, breakthrough invasive fungal diseases were found in 13 patients (18.3%) and invasive aspergillosis was the most common infection (9 patients, 69%). The median time to perform posaconazole therapeutic drug concentration in those with and without breakthrough infections were 7 days and 13 days, respectively (p = 0.029). Approximately 50% of the patients with breakthrough fungal infections had suboptimal plasma posaconazole concentration (< 0.7 µg/ml); whereas, suboptimal concentration was found in only 29% of those without breakthrough infection (p = 0.169). In the treatment group, 8 patients (88.9%) were cured. One patient died and was the only one with hematologic malignancy and no therapeutic drug monitoring.

Conclusions: Posaconazole oral suspension seems to be less efficacious in preventing IFD in Thai patients. This partly may be due to higher incidence of invasive fungal diseases and lack of or delayed therapeutic drug monitoring, resulting in suboptimal plasma drug concentration. Thus, posaconazole can be effective in treatment of IFD.

Keywords: Posaconazole, Antifungal prophylaxis, Antifungal treatment, Breakthrough fungal infection