Infections Following Stem Cell Transplantation in Siriraj Hospital: A 5-Year Experience

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Background: Patients who have received hematopoietic stem cell transplantation (HSCT) are more likely to develop infections due to immunosuppressive therapy and/or graft versus host diseases (GVHD). Clinical characteristics of infection in HSCT recipients in Siriraj Hospital have never been investigated. This study aimed to determine the epidemiology, clinical features, factors influencing infections and outcomes in patients undergoing HSCT in Siriraj Hospital during pre-engraftment, early (< 100 days) and late (≥ 100 days) post-engraftment period.

Methods: A retrospective review of medical records of patients older than 15 years who underwent HSCT at Siriraj Hospital between January 2006 and December 2010 was conducted. Prevalence of infections and clinical characteristics among such patients were analyzed.

Results: There were 133 patients, 71 (53.4%) were male. Mean age was 40 years (range 29-51 years). One hundred and twenty-two patients had hematologic malignancies and 13 patients had other hematologic diseases. Eighty-six, 44 and 3 patients received allogeneic, autologous and other stem cell transplantations. The overall mortality of patients undergoing HSCT was 23.3%. During pre-engraftment and early post-engraftment period, bacteria were the most common etiologic agents of infectious complications (48.16% in allogeneic HSCT and 31.8% in autologous HSCT), followed by virus (22.1% in allogeneic HSCT and 15.9% in autologous HSCT) and fungi (2.3% in allogeneic HSCT and none in autologous HSCT). Escherichia coli, Klebsiella pneumoniae and Enterococcus fecalis were the most common causative bacterial agents. The common sites of bacterial infection were non-catheter related blood stream infection and urinary tract infection. During late post-transplantation period, overall infection rate of allogeneic HSCT recipients was significantly higher than those of autologous HSCT recipients (50.6% vs. 18.6%). In the late post-transplantation infection, virus was the most frequently causative pathogens (40.5% in allogeneic HSCT and 9.3% in autologous HSCT), followed by bacteria (17.7% in allogeneic HSCT and 9.3% in autologous HSCT) and fungi (13.9% in allogeneic group).

Conclusions: Infections from gram-negative bacteria are common during pre-engraftment and early post-engraftment period of patients undergoing HSCT. Whereas infections caused by virus and fungi were more prevalent in late post-transplant period, particularly in patients who had received allogeneic HSCT.