Infections in Patients with Aplastic Anemia in Maharaj Nakorn Chiang Mai Hospital

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**Background:** Infection is a significant cause of death in patients with aplastic anemia (AA). However, there was no study about infection and its complication in patients with AA in Maharaj Nakorn Chiang Mai Hospital.

**Objective:** Primary objectives of this study were to determine the prevalence of infections and to determine types of pathogens associated with infections in patients with AA. Secondary objectives was to evaluate overall survival after infections as well as risk factors of infections in patients with AA.

**Methods:** This study retrospectively evaluated the episodes of infection (IEs), type of infections, associated pathogens, and outcomes of infections in patients with AA who were diagnosed and treated at Maharaj Nakorn Chiang Mai Hospital between January 2010 and December 2015.

**Results:** Sixty-seven patients with a median age of 51 years (range, 15-87 years) were enrolled. Forty two patients (63%) were severe AA. Median absolute neutrophil count (ANC) was 984 cells/mm3 (range, 120-5,500 cells/mm3). Twenty five patients (37%) received antithymocyte globulin plus cyclosporine, while 41 patients (63%) received anabolic hormone, and 2 patients (3%) underwent bone marrow transplantation. Overall, 31 IEs were documented in 21 patients (31%). The most common microbiologically documented site of infection was bloodstream infection (26%), followed by pulmonary infection (15%). Culture-negative febrile neutropenia occurred in 13%. Common pathogens identified were bacteria (36%), mainly gram-negative (52%) including Acinetobacter baumannii (23%) and Pseudomonas aeruginosa (17%). Fungal infections were diagnosed in 5 patients (11%) and all of them infected with Aspergillus spp. Six patients (9%) died during the study period from infection which gram-negative bacteria were most common pathogens (67%). Patients with infections had 5-year overall survival of 72%, which was significantly less than those without infection (100%) (p=0.0002). Two risk factors were correlated to high probability of infection with age equal or less than 50 years at the time of infection (HR 2.826, 95% CI 1.034-7.717, p=0.043) and ANC < 500 cells/mm3. (HR2.286, 95%CI 1.034-7.717, p=0.043)

**Conclusion:** Infection remains a major cause of death in patients with AA. Prevalence of infections in AA patients in Maharaj Nakorn Chiang Mai Hospital is 31%. Bacterial infections, especially those caused by gram-negative bacteria, constitute the major cause of infection.

**Keywords:** Infections, Aplastic Anemia