FACTORS ASSOCIATED WITH UNFAVORABLE TREATMENT OUTCOMES IN INVASIVE PULMONARY ASPERGILLOSIS (IPA) IN NORTHEASTERN THAILAND

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Abstract. Invasive pulmonary aspergillosis (IPA) is a severe fungal infection with a high mortality rate. The objective of this study was to determine the clinical characteristics, radiographic and laboratory findings of patients diagnosed with IPA and to identify factors associated with unfavorable treatment outcomes in order to inform efforts to prevent those outcomes. We conducted a retrospective study of patients diagnosed with IPA during 2010 and 2016 at Srinagarind Hospital, northeastern Thailand. A total of 38 patients were diagnosed with IPA during the study period at the study hospital (8 proven, 26 probable, and 4 possible). The mean (±SD) age of subjects was 42 (±15) years; the male to female raio was 9:10. Thirty-four percent of subjects worked in agriculture. All study subjects had an underlying disease or were taking immunosuppressive drugs. Seventy-four percent of subjects had a hematological malignancy and 21% had an autoimmune disease. The median (IQR) duration of symptoms was 13 (IQR, 8-20) days. The common symptoms were fever (92%), cough (42%), dyspnea (42%) and pleuritic chest pain (11%); 1 patient had hemoptysis. Two patients had a disseminated infection. Sixty-eight percent of subjects had neutropenia. The median time of diagnosed neutropenia before IPA infection was 15 (IQR, 10-19) days. Of the 38 subjects who had a chest radiograph, 47% had a nodular infiltrate, 45% had a patchy infiltrate and 29% had a pleural effusion. Computed tomography (CT) of the chest was performed in 24 patients. On chest CT, 71% had a halo sign, 38% had a pulmonary nodule, 38% had an alveolar infiltration and 38% had a pleural effusion. A serum galactomannan test was performed in 35 subjects, of whom 14% had a low index ratio (IR) (<0.5), 37% had an IR level between 0.5-1.0 and 49% had a high level IR (≥1.0). Eighteen percent of subjects were treated with amphotericin B, 24% were treated with voriconazole and 58% were treated with both. Seventy-six percent had clinical improvement, 24% had an unfavorable treatment outcome. Of those treated with amphotericin B, 57% had an unfavorable outcome (43% did not improve and 14% died); of those treated with voriconazole, 22% had an unfavorable outcome (22% did not improve and 0% died) and those treated with both amphotericin B and voriconazole, 14% had an unfavorable outcome (5% did not improve and 9% died). Factors significantly associated with unfavorable outcome were a high serum galactomannan level with IR ≥1.0 (aOR=12.3, 95% CI: 1.1-133.4; p=0.04) and shock (aOR: 8.2, 95% CI: 1.1-62.2; p=0.04). In conclusion, factors associated with unfavorable treatment outcome of these subjects were a high serum galactomannan level and shock.

Keywords: Invasive pulmonary aspergillosis, associated factor, treatment outcome

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