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Poster Session V
Infections in immunocompromised patients

EPIDEMIOLOGICAL STUDIES ABOUT THE INVASIVE FUNGAL INFECTION IN LEUKEMIA PATIENTS RECEIVING INDUCTION CHEMOTHERAPY IN TAIWAN—HIGHER INCIDENCES AND ADVERSE SURVIVAL IMPACT WERE NOTED.

B.S. Ko[1], H.C. Kung[1], W.C. Li[1], H.F. Tien[1], Y.C. Chen[1]

[1]Internal Medicine, National Taiwan University Hospital, Taipei City, Taiwan

Objectives: The incidence of invasive fungal infection (IFI) in patients with hematologic malignancies increased dramatically in the past years and the epidemiological characteristics of IFI continued to evolve in leukemia patients. This report is aimed to illustrate the incidences of IFIs in acute leukemia patients receiving induction chemotherapy in Taiwan; also we hope to identify what are the potential risk factors of IFIs for these patients, and if IFIs have negative prognostic impacts on them.

Methods: From Jan 2004 to Dec 2009, a total of 507 courses of induction chemotherapy courses in 460 newly diagnosed or relapsed acute leukemia patients in our center were included in this retrospective cohort study. Their age, gender, disease type, antecedent hematologic disease, induction chemotherapy regimens, induction responses, imaging reports, histopathology reports, microbiology reports, treatment outcome of IFI and mortality were collected for analysis retrospectively by chart review.

Results: Their median age was 47 years (ranging from 15 to 87 years). Male to female ratio was 1.08:1. The majority of the disease type was non-M3 AML (73.8%). Underlying hematologic diseases were presented in 13.2% (67/507) of patients. Standard induction chemotherapy was used in 443 (87.6%) courses, and 50.7% of patients achieved complete remission (CR) in 1 cycle. The incidence of all-category IFIs was 32.1%, of which 5.5% was classified as proven IFI, 5.9% as probable IFI and 20.7% as possible IFI (as in Figure). *Candida tropicalis* (23.5%, 8/34) and *Aspergillus fumigatus* (17.6%, 6/34) were the leading identified pathogens among yeast and mold, respectively. Lower respiratory tract is the most common site involved for IFI (72.6%, 122/168). Patients with antecedent hematologic disease or refractory to induction chemotherapy had increased risk to have any categories of IFIs (p=0.008 and p <0.001, respectively) in univariate analysis; and muti-variate analysis confirmed the correlation also. Patients with all-category IFIs had worse median survival than those without, no matter their diseases are fresh leukemia (30.8±3.2 vs. 42.3±2.2 months, p<0.001) or first-relapsed leukemia (13.6±2.9 vs. 32.9±3.8 months, p=0.005), and the presence of IFI in induction therapy was an independent poor prognostic factor in multivariate analysis. This survival disadvantage is observed for all the 3 individual (proven, probable or possible) IFI groups IFIs. Even in patients who survived more than 3 months and escaped from initial IFI-attributed mortality, the presences of IFIs in induction still predicted a poor long-term outcome.

Conclusions: This study gives a comprehensive epidemiological information about IFIs in induction chemotherapy for leukemia, and thiswould provide useful perspectives in establishing the concepts about anti-fungal prophylaxis and treatment for patients with hematological malignancies.