Tuberculous Lymphadenitis: Mantoux Test and Cytokines Profile as Marker of Disease and Healing

A. Elnour

Institute of Endemic Diseases, University of Khartoum, Khartoum, Sudan

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Background: HIV pandemic and multi-drug resistance pose real threats to TB control programs. Tuberculosis (TB) was not known in Sudan until the end of the 19th century, and the incidence of both pulmonary and extra pulmonary tuberculosis is rising. There are no accurate measurable immunological markers that correlate with disease and healing/protection in mycobacterial diseases. Patients with tuberculous lymphadenitis are in better health compared to those with pulmonary disease.

Objective: To determine measurable immunological surrogate markers of disease/healing for tuberculous lymphadenitis.

Materials & Methods: Following informed consent, patients with tuberculous lymphadenitis and comparator groups (pulmonary tuberculosis; aberrantly healthy volunteers) were enrolled in the study. Hematological profiles, Mantoux test, IFN-γ and IL-10 production by PBMCs were estimated. Following a six-month treatment, patients were followed for varied periods of time (2–10 years).

Results & Discussion: Thirty six patients with FNAC cytomorphological diagnosis of tuberculous lymphadenitis (TBLN), 40 patients with pulmonary disease and 20 healthy volunteers were enrolled in the study. Patients were sequentially selected from a lymphadenopathy clinic. The ages and the hematological profiles of the study groups were found to be comparable. The Mantoux test was reactive in 100% (36/36) of TB lymphadenitis patients and remained so at cure and was found to be significantly associated with higher levels of IFN-γ (p = 0.01). A third of patients with pulmonary disease were reactive in the Mantoux test. High IFN-γ and IL-10 levels were detected in all patients with tuberculous lymphadenitis at diagnosis (disease). At the end of the treatment (healing), IFN-γ increased significantly compared with its levels at diagnosis (p = 0.0001). IL-10 levels decreased significantly compared to those at diagnosis (disease) (p = 0.000). Patients with pulmonary disease had significantly high levels of IL-10. There was no significant difference in the levels of IL-10 in healthy controls who had reactive Mantoux test and those with treated tuberculous lymphadenitis (p = 0.7).

Conclusion: Mantoux is a good disease marker especially in patients with tuberculous lymphadenitis, but although it shows good correlation with IFN-γ production, it is poorly correlated with protection. A mixed Th1/Th2 immune response is a good marker of disease in patients with tuberculous lymphadenitis. Increased IFN-γ and reduced IL-10 levels correlated well with healing/cure in patients with tuberculous lymphadenitis.

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Widespread Dissemination of Class 1 Integrons Associated with Multidrug-Resistant (MDR) Acinetobacter Clones in Taiwan

L.Y. Huang1, T.L. Chen2, P.L. Lu3, C.A. Tsai4, W.L. Cho5, F.Y. Chang6, C.P. Fung7, L.K. Siu1,∗

1 Division of Clinical Research, National Health Research Institutes, Zhunan Town, Taiwan
2 Department of Medicine, Taipei Veterans General Hospital, Taipei, Taiwan
3 Division of Infectious Diseases, Department of Internal Medicine, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan
4 Department of Medicine, Taichung Veterans General Hospital, Taichung, Taiwan
5 Institute of Clinical Medicine, School of Medicine, National Yang-Ming University, Taipei, Taiwan
6 Graduate Institute of Medical Sciences and Department of Medicine, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan
7 Section of Infectious Diseases, Department of Medicine, Taipei Veterans General Hospital, Taipei, Taiwan

Background: Class 1 integron, one of antibiotic resistant gene acquisition mechanisms, is commonly found in Gram-negative bacilli clinical isolates as well as A. baumannii. In Taiwan, no large scale study has been investigated on the role of integron in multidrug-resistant Acinetobacter baumannii (MDR-AB). In present study, integron cassettes and genotypes of MDR-AB strains were characterized to reveal their relative antibiotic resistance and clonal dissemination.

Methods: 283 MDR-AB bloodstream isolates were collected from three teaching hospitals in Taiwan over an 8-year period. Antimicrobial susceptibility was determined by automated SENSITITRE Susceptibility Plate. Integrase and integron PCR were performed to investigate the presence of class 1 integron. PCR-RFLP and sequencing were used to type the integron cassettes. Ribotyping and PFGE were used to study their genetic relatedness.

Results: Susceptibility data showed that strains carrying the class 1 integron were significantly more resistant (P < 0.01) to all tested antibiotics than strains lacking integrons, with the exception of aztreonam and chloramphenicol. Seven types of gene cassettes were identified among these strains, including two new cassettes that have not been previously reported. The vast majority of the cas-