

# Laboratory Diagnosis of Suspected Children and Adolescent Tuberculosis Cases

## **Abstract:**

### **Purpose**

To evaluate a T-cell based assay for the diagnosis of suspected children and adolescent tuberculosis cases.

### **Materials and Methods**

Blood samples of 39 suspected TB and 6 control cases were collected from 2 medical centers and sent to the reference laboratory of Mycobacteriology at Taiwan CDC for analysis. The results of T-SPOT<sup>TM</sup>.TB assay along with the results of tuberculin skin test (TST), clinical information and data from the clinical laboratories were analyzed thoroughly for evaluation.

### **Results and Discussion**

Of 18 confirmed TB cases, 7 cases had contact history. Among those 7 cases, 42.9% were TST positive, 14.3% smear positive, 28.6% culture positive, and 85.7% T-SPOT positive. While, for those 11 cases without contact history, 50% were TST positive, 40% smear positive, 50% culture positive and 45.5% T-SPOT positive. For 11 pulmonary TB cases, 54.5% were TST positive, 30% smear positive, 30% culture positive, and 54.5% T-SPOT positive. While, for 7 extra-pulmonary cases, 33.3% were TST positive, 28.6% smear positive, 57.1% culture positive and 71.4% T-SPOT positive.

### **Conclusion and Suggestions**

The T-SPOT assay demonstrated comparative test results with TST for active TB cases without contact history. It has excellent sensitivity and specificity for the detection of cases with contact history, and extra-pulmonary TB. This assay has advantage of shortening the diagnostic time compared to the TST test and avoiding the interference of BCG inoculation. Even through only limited numbers of cases were tested, it is still suggested for rapid diagnosis of certain types of TB cases. This study will continue recruiting more cases for the diagnosis of suspected children and adolescent tuberculosis cases before final recommendation.

**Key Words:** tuberculosis 、 children and adolescent 、 T-SPOT<sup>TM</sup>.TB