

Infrared thermography to mass-screening suspected SARS patients with fever

邱弘毅

Chiu WT;Lin PW;Chiou HY;Lee WS;Lee CN;Yang YY;Lee HM;Hsieh MS;Hu
CJ;.....;Hsu CY

Abstract

Fever greater than 38 degrees C is a cardinal sign of patients with the severe acute respiratory syndromes (SARS). To reduce the risk of nosocomial cross infections, screening all patients and visitors who visit hospitals and clinics for fever at the entrance of every hospital building has become a standard protocol in Taiwan during the SARS epidemic from mid-April to mid-June 2003. We used a digital infrared thermal imaging (DITI) system (Telesis Spectrum 9000 MB) to conduct mass screening of patients and visitors who entered the hospital to identify those with fever. The DITI system has two components: a sensor head and a PC imaging workstation. The sensor head is an optic-mechanical device which consists of imaging optics for focusing the infrared source information on the infrared detector. The infrared images are further converted into electrical signals, which are then processed for real-time display on the monitor. During the period from April 13 to May 12 2003, 72,327 outpatients and visitors entered Taipei Medical University-Wan Fang Hospital, Taipei, Taiwan. A total of 305 febrile patients (0.42%) was detected by infrared thermography. Among them, three probable SARS patients were identified after thorough studies including contact history, laboratory tests and radiology examinations. The findings suggests that infrared thermography was an effective and reliable tool ideal for mass-screening patients with fever in the initial phase of screening for SARS patients at a busy hospital which sees approximately 3,000 outpatients every weekday during the SARS epidemic.