Objectives: New tests are urgently needed for the diagnosis of TB disease. Serodiagnostic tests may be useful, as they may be easily adaptable into point-of-care tests. The aim of the current study was to evaluate the usefulness of antibody responses against novel M tuberculosis (Mtb) antigens as tools for the diagnosis of TB disease.

Methods: We prospectively collected plasma samples from individuals presenting with symptoms suggestive of TB disease at a primary health care clinic in Cape Town, South Africa. Patients were later classified as having TB or other respiratory diseases. We evaluated IgA and IgM antibody responses against seven Mtb antigens in plasma samples and assessed their diagnostic potentials by receiver operator characteristic (ROC) curve analysis. We also assessed the utility of biosignatures comprising antibodies and cytokines in the diagnosis of TB disease.

Results: Out of the 156 study participants, 28 (18%) were HIV infected and 26 were diagnosed with TB disease. IgA and IgM responses against single antigens, including NarL, Rv3019c, and two other proteins, showed potential in the diagnosis of TB disease, with area under the ROC curve (AUC) up to 0.74. A seven-antibody biosignature diagnosed TB disease with an AUC of 0.8, whereas a combination of two antibodies and five host biomarkers diagnosed TB disease with a sensitivity of 95% (CI, 73%-100%) and specificity of 89% (CI, 68.7%-97%).

Conclusion: Although antibodies showed potential in the diagnosis of TB disease, the use of host inflammatory biomarkers in combination with antibodies may result in more accurate diagnostic tools for TB disease.

Evaluation of the Usefulness of the Decontamination-Reprocessing in Liquid Medium for Recovery of Mycobacteria

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Objective: The purpose of this study is to evaluate the usefulness of the reprocessing decontamination-reprocessing of contaminated samples in liquid medium, commercially available in BACTEC MGIT 960 system (Becton Dickinson, USA), by comparing the results with 3% Ogawa media (Korea Institute of Tuberculosis, Korea).

Methods: Specimens were collected from patients who visited a hospital from 2016 to 2017 and were digested and decontaminated according to standard Centers for Disease Control methods using 0.25% sodium hydroxide with N-acetyl-L-cysteine. The treated specimens were cultured in liquid media, mycobacteria growth indicator tube (MGIT), and 3% Ogawa media. Positive results of cultures were confirmed through acid-fast bacillus (AFB) stain (Ziehl-Neelsen stain). Samples showing AFB smear-positive were further tested using TB Ag MPT64 tests (Standard Diagnostics, Korea) to identify Mycobacterium tuberculosis (TB) or nontuberculous mycobacteria (NTM). When the samples were contaminated, we performed the decontamination process repeatedly.

Results: A total of 2,715 (24.5%) out of 11,064 specimens showed positive signs by the BACTEC MGIT 960 system. Among them, 711 (26.2%) samples were re-decontaminated. After re-decontamination, 670 (94.2%) samples were negative, 5 (0.7%) samples were TB, and 36 (5.1%) samples were NTM in MGIT. We compared results with Ogawa; 55 (7.7%) samples showed discordant results between...
MGIT and Ogawa as below (MGIT/Ogawa): TB/negative, 2 (0.3%); NTM/negative, 24 (3.4%); negative/TB, 4 (0.6%); negative/NTM, 23 (3.2%); and NTM/TB, 2 (0.3%).

Conclusion: We found that the liquid media of the decontamination-reprocessing had a complementary action with Ogawa for detecting TB or NTM. For all that, two samples showing TB after the re-decontamination could be missed. Obviously, it played a decisive role in these cases. However, the samples were not enough to evaluate the efficiency; further study is necessary.