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Poster Session III
Tuberculosis: non-molecular diagnosis and pathogenesis

VALIDATION OF COPAN MYCO-TB AND MYCO-TB KIT FOR RAPID DIGESTION AND DECONTAMINATION OF CLINICAL SPECIMENS FOR THE DETECTION OF MTB WITH ALL TESTING METHODS.

E. Mazzola[1], A. Nava[1], M. Delle Canne[1], S. Castriciano[2], G. Gesu[1]

[1]Microbiology, A.O. Ospedale Niguarda Ca' Granda, Milano, Italy ; [2]Laboratory, Copan Italia Spa, Brescia, Italy

Objectives: Specimens for Mycobacteriology culture contain normal flora, pathogenic contaminants and large amount of mucus. Mycobacteria (MTB) are slow growing and require long incubation times allowing contaminating organisms to overgrow in cultures, blocking the ability to detect the presence of the MTB. Long digestion and decontamination steps are used for processing specimens and digesting reagent are prepared daily and contamination may occur when reagents are added to a batch of tubes, thus causing specimens cross-contamination. Copan developed the MYCO-TB kit, a ready to use sample digesting and decontaminating solution, available in single units or in a kit format. The objective of this study was to compare the Copan MYCO-TB Kit to AlphaTec NAC-PAC™ system currently in use for digesting and decontaminating clinical specimens for MTB detection by microscopy, PCR, MGIT liquid culture and Lowenstein-Jensen (LJ) medium.

Methods: Specimens (n=170) (sputa, expectorates, gastric aspirates, and others) for the investigation of MTB were used for this study. Samples were processed in duplicate, one with the NAC-PAC™ system as per method, the other with the Copan MYCO-TB. Using a pipette, the sample was transferred to the tube containing the MYCO-TB reagent. After adjusting the 1:1 ratio with PBS, the sample was vortexed for 30s, and incubated at RT for 3min, thirty ml of PBS added and mixed by inverting up and down. Sample was centrifuged for 5min at 3300G, and supernatant was discarded. Two ml of PBS were added to sample and vortexed to resuspend the cell pellet. Sample was inoculated in MGIT vial and solid LJ culture medium as per SOP. The rest used for real-time PCR for MTBC with the Xpert MTB-Rif (Cepheid). Microscopy, PCR, TAT and cultures contamination or positivity in liquid MGIT and LJ medium were recorded.

Results: So far 170 clinical specimens were tested to date, NAC-PAC™ had 17/170 microscopy, 23/170 PCR and 19/170 MIGIT positive while MYCO-TB kit had 19/170, 23/170 and 17/170 positive respectively. The NAC-PAC™ had 24 contaminated MGIT versus 8 for the MYCO-TB; the TAT to positive was similar for both systems. So far M. Tuberculosis, M. gordonae and M. intracellulare were identified. Some cultures are still incubating.

Conclusion: The Copan MYCO-TB, a ready to use reagent that allows rapid digestion and decontamination of specimens for the detection of MTB by microscopy, PCR and both MGIT and LJ culture. The ready to use and single kit features enables processing of individual samples without the risk of cross-contamination.