

ABSTRACT

Rapid culture method of Agar Nutrient with bovine blood serum for detecting *Mycobacterium Tuberculosis* in sputum specimen patients with suspected pulmonary Tuberculosis

Amila Widati

Tuberculosis (TB) is a contagious infectious disease that still remains a health problem society in the world, including Indonesia. According to Global Tuberculosis Control in 2009 (data of 2007) states that the prevalence of all types of TB cases has increased each year approximately 236,029 new cases of TB, while deaths by 39 per 100,000 people or 250 people per day (WHO, 2009). While to upright the TB diagnostic in National TB Prevention Program according to the BTA microscopic test from sputum, there are still sensitivity problem. Definitive diagnosis of pulmonary tuberculosis by culture examination to detect *Mycobacterium tuberculosis* is the most accurate test until now, but there are constraints with the culture on solid such as requiring a quiet long time.

The purpose of this study was to know the differences of sensitivity and speed of *Mycobacterium tuberculosis* colonies growth on Agar Nutrient media with addition bovine blood serum with by Lowenstein – Jensen media.

This study used an observational analytic design with laboratories test. The study was conducted by examining 30 samples of sputum in suspected pulmonary TB patients from RS. Khusus Paru Surabaya (BP4). Sputum was decontaminated and concentrated by using a modified method of Alkali Petroff (WHO). Sediments were cultured in Nutrient Agar media with bovine blood serum as the addition as much as 10%.

Based on the analysis by using a independent t-test found difference in colony growth rate on Nutrient Agar media and the addition of bovine blood serum compared to Lowenstein - Jensen. At the first week research (the seventh day) was found a colony growth and it can be seen clearly by using a magnifying glass in Nutrient Agar and culture media with bovine blood serum as the addition. While in Lowenstein – Jensen culture media, it didn't appear any colony growth at all. The average rate of the colony growth in an Nutrient Agar culture media and the addition of bovine blood serum is about 25 days, while in Lowenstein - Jensen media culture is about 32 days. It caused in Nutrient Agar media with the addition of bovine blood serum has the total protein plasma contain up to 80%.

Culture by using the metod of Nutrient Agar with the addition of bovine blood serum has faster colony growth and more sensitive than the method of Lowenstein - Jensen.

Keywords: Nutrient Agar with addition of bovine blood serum, colony growth rate of *Mycobacterium tuberculosis*, sensitivity of detection.