

## 第 35 回 臨床抗酸菌研究会について

会長：倉岡敏彦（国家公務員共済組合連合会 吉島病院 顧問 前委員長）

日時：5月10日（木）18：00～19：30

会場：E会場（第87回日本結核病学会総会 広島国際会議場 B2F コスモス）

特別講演：Drug Resistant TB: Heading Towards a New Direction and New Detection Tools.

演者：Salman Siddiqi(Consultant Mycobacteriologist)

臨床抗酸菌研究会事務局 齋藤 肇

[TEL:082-232-4857](tel:082-232-4857) FAX082-293-2214

特別講演抄録

### "Drug Resistant TB: Heading Towards a New Direction and New Detection Tools"

**Salman Siddiqi, PhD**  
**Sparks, MD, USA**

There are two main hurdles in the tuberculosis control programs, delay in diagnosis and improper or intermittent treatment. Delay in diagnosis causes disease progress and increased transmission of the disease in contacts, while improper treatment causes development of drug resistance. Directly Observed Therapy Short course (DOTS) helped in controlling the disease incidence but also helped in increasing the drug resistance. Drug resistance to any drugs progressed into Multi Drug Resistance (MDR), then Extremely Drug Resistance (XDR) and then finally to Totally Drug Resistance (TDR). Resistant cases can not be treated without having information about what drugs they are susceptible to. Traditional solid culture-based tests were time consuming taking 6-10 weeks and thus, less effective. Introduction of liquid culture, mainly BACTEC Radiometric system and BACEC MGIT 960 system shortened the time to report to 14-21 days. Later molecular techniques were introduced with a target of reducing reporting time to hours. Initially developed molecular tests, which were cumbersome and were based on large instruments, are being replaced by simpler tests like Line Probe. Recent introduction of Gene Xpert is a big leap towards the molecular detection reducing the reporting time within 60 minutes.

One of the main limitations of molecular techniques is the issue of sensitivity and sometimes specificity of the test. All the gene mutations responsible for resistance to most of the anti-tuberculosis drugs are not known, and thus, for many drugs the sensitivity of the tests is unacceptable. Moreover, these tests work best with AFB smear-positive specimens only. One of the leading molecular tests, Xpert detects only Rifampicin resistance and thus, it is recommended as a screening test for MDR. Cost is another concern. At present all the new molecular tests are costly and may not be suitable for high-burden low-resource countries unless supported by funding agencies.

At this point, according to WHO, liquid culture-based tests are the only stand-alone tests and are considered as a gold standard while all other tests are add-on tests for a quick screening of MDR so that an early treatment could be started.

We are heading towards a new direction of rapid diagnosis and detection of drug resistance. It is quite evident that molecular tests could be the ultimate tools but time and much work is needed to bring these tools to such perfection that these could be considered as the replacement of culture-based techniques and are suitable for TB high-burden countries.