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Comparative Study between the Conventional and Recent Methods in Diagnosis of Genitourinary Tuberculosis

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بسم الله الرحمن الرحيم

يرفع الله الذين آمنوا منكم والذين أُوتوا العلم درجات والله بما تعملون خبير

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Introduction And Aim of the work

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Mycobacteria are responsible for considerable human morbidity and mortality worldwide . *Mycobacterium tuberculosis* (MTB) infects 1.7 billion people worldwide and causes 3 million deaths each year, the highest mortality rate caused by any single infectious organism ***(Griethuysen et al, 1996)*** .

The global incidence of tuberculosis (TB) was predicted to increase by 36% between 1990 and 2000. Notification rates of TB in some Western European and other industrialized countries have increased ***(Raviglione, 1995)*** . These rates may again increase in the near future because of the population growth , migration of people from regions of the world with higher incidence of TB , and the human immunodeficiency virus (HIV) epidemic ***(Torrea et al, 1996).***

The prevalence of TB increased also among other high - risk populations like chronic alcoholics , homeless people and drug abusers ***(Magdalena et al, 1998)*** . In addition, the advancing age of population and the general neglect of TB control programs in many countries have also contributed to the increased incidence of TB ***(Brudney and Dopkin, 1991)*** . Also , drug resistant MTB strains have

emerged , which further complicates its control programs ***(Bloch et al, 1994)*** .

According to World Health Organization (WHO) , one third of the population is infected with TB and there are 8 to 10 million new TB cases every year ***(Gerdes et al, 1999)*** .

Because of the increased incidence of TB in many parts of the world , the need for rapid diagnosis has become paramount . An essential element in the control of TB is the rapid , sensitive and specific identification of the causative agent . Until now , diagnosis is largely based on clinical signs , radiological findings , tuberculin tests , microscopic examination and culture of samples for MTB . However , these methods have many disadvantages , tuberculin tests lack specificity and only give an indication of previous exposure to TB. Direct microscopic examination does not have enough specificity or sensitivity, while mycobacterial isolation is time - consuming ***(Bergman and Woods, 1996).***

An alternative to these classical methods , new nucleic acid - based technologies may be more promising because it may be more rapid , sensitive and specific means of identification of mycobacteria . Two commercial standardized nucleic acid - based amplification techniques have been reported to yield reliable results within 5 to 7 hours of sample processing: Roche Amplicor MTB and Gen - probe AMTB . The