

Is Tuberculosis a Risk Factor for Different Prostatic Lesions Including Prostate Cancer in Bangladesh

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Volume 1 Issue 1 - 2018

Received Date: 22 April 2018

Accepted Date: 02 May 2018

Published Date: 14 May 2018

2. Keywords

Tuberculosis; Association; Prostate Cancer (PCA) Benign Enlarged of Prostate (EP); Prostatic Interstitial Neoplasia (PIN) chronic inflammation

1. Abstract

Tuberculosis is common in Bangladesh due to poverty, overcrowding and open case and also due to Multi Drug Resistance (MDR). Tuberculosis patients are usually immunodeficient. Prostate lesions are common in male over 50 year include Benign Enlargement of Prostate (BHP), Prostatic Intraepithelial Neoplasia (PIN) and Prostatic Carcinoma (PCa). May risk factors are attributed for prostatic lesions including chronic inflammation like tuberculosis. With this in mind an attempt was made to find out if there is any association of tuberculosis and BEP, PIN & PCa. A total of 85 biopsy sample of histologically diagnosed cases of different prostatic lesion were subjected to Polymerase Chain Reaction (PCR) by Xene expert for MTB. None of the 85 biopsy sample show presence of MTB. The findings indicate that tuberculosis is not a risk factor for prostatic lesions in prostatic sample in Bangladesh.

3. Introduction

Tuberculosis (TB), caused by the bacterium mycobacterium tuberculosis is a global health problem. According to the World Health Organization (WHO) one third of the world population is latently infected with M. tuberculosis. An estimated 9.6 million people developed TB and 1.5 million died from the disease in 2014 [1]. Pulmonary TB is the most common form of the disease; however, 20-25% of cases are extra-pulmonary in nature. Genitourinary TB accounts for 5-10% of extra-pulmonary cases in developed countries and 15-20% of cases in developing countries [2]. Tuberculosis of the prostate gland is seen in 25.6% of genitourinary system. Studies have shown that approximately 20% of all human cancers in adults result from chronic infection and inflammatory states [3]. Chronic prostate inflammation accelerates initiation of prostate cancer originating from basal cells and accelerates prostate cancer progression. There are reports describing TB of testis and prostate mimicking testicular cancer and prostatic caused by M. tuberculosis infection serving as a predisposing

factor for prostate cancer [4]. Review of literature revealed two published cases of tuberculosis prostatitis in Bangladesh [5,6]. As Bangladesh ranks 6th among 22 TB burden countries globally [7], we thought to investigate whether there is any association between TB of prostate and development of prostatic lesions especially cancer in a cross section of Bangladeshi population.

4. Method

The study was a retrospective conventional sampling analysis based on 85 prostatic biopsy samples, each collected by Trans-Urethral Resection of Prostate (TURP) from 85 patients, admitted in different hospitals of Dhaka city, Bangladesh, namely BIRDEM hospital, Dhaka Community hospital, Uttara Crescent hospital and Gastro liver clinic between July 2013 and December, 2014. The male patients included in this study had symptoms of prostatic lesions such as frequency, urgency, dysuria, urinary incontinence, urinary tract infection, inadequate voiding and low back pain. The tissue samples along with two known confirmed TB lymph node tissue samples were used as positive controls and were processed for molecular diagnosis of TB by conventional

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PCR [8], which detects a 123 bp fragment of insertion element IS 6110 mycobacterium tuberculosis and used for diagnosis of extra pulmonary tuberculosis.

5. Result

The age range of patients were 35-90 years with the mean of 65.82 years.. The histopathology of the 85 cases of suspected prostatic revealed Granulomatous prostatitis in 3 (3.5%) possibly due to extension from Genitourinary Tuberculosis Benign Enlargement of Prostate in 48 (56.5%), PIN in 26 (30.6%) and PCa in 8 (9.4%) cases. The PCR products run on an 1.5% agarose gel, revealed that no amplicon was produced from all the sample tested as a result of amplification from the primers.

6. Conclusion

Although prevalence of tuberculosis is high in Bangladesh still tuberculosis is not a risk factor for prostatic lesion in Bangladesh population. Gene Xpert for formalin-fixed paraffin embedded tissues in ruling out whether a suspected patient is infected with *M. tuberculosis* or not is any tissue sample suspected is a reliable method of choice for detection of tuberculosis [9,10].

7. Conflict of Interest

None among the authors.

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