

3rd International Conference on
Infection, Disease Control and Prevention
&
2nd International Conference on
Microbial Pathogenesis & Infectious Diseases
June 25-26, 2018 | Vancouver, Canada

Association of P2X7 1513A/C polymorphism with susceptibility to tuberculosis among sudanese patients

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Background: Tuberculosis is a chronic, systemic infectious disease caused by *M. tuberculosis* mostly infecting the lung to cause pulmonary tuberculosis or localize in alternate body sites leading to extra-pulmonary tuberculosis (EPTB). The P2X7 receptor expressed in a wide variety of normal and disease-associated cell types, activated by extracellular adenosine 5'-triphosphate results in numerous events including the release of pro-inflammatory mediators, cell proliferation or death, and killing of intracellular pathogens. A deficiency of P2X7-mediated control of mycobacterial infection within macrophages in the lung may permit spread to extrapulmonary sites where the infection either progresses to post-primary TB disease.

Methods: One hundred and twenty tuberculosis patients with 46 apparently healthy controls were included for genotyping of the P2X7 polymorphism using Polymerase chain reaction and restriction fragment length polymorphism (PCR-RFLP) and confirmed by sequencing a subset of samples.

Results: This study found that the P2X7 1513A/C polymorphism is significantly associated with tuberculosis infection (CC, AC OR=4.615, 2.058). The pulmonary tuberculosis was the most predominant in the study population but the CC, AC allele had statistical significant association with the Extra-pulmonary tuberculosis infections (OR=2.65). Another polymorphisms rs2230912 was detected from sequencing results may be associated with TB infections.

Conclusion: The CC genotype is associated with susceptibility to TB infections among Sudanese patients and associated with the extrapulmonary TB. **Keywords:** TB, P2X7, susceptibility, pulmonary TB, Extra-pulmonary, PCR, RFLP.

Biography

Hajir is working at National center of neurological sciences, sudan & also she is the faculty of medical laboratory sciences, Al-Neelain University-Sudan and also faculty in the department of surgery, faculty of medicine, university of khartoum-Sudan.

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