UNIVERSITI TEKNOLOGI MARA

THE ROLE OF TOXOPLASMA GONDII (TG) IN SCHIZOPHRENIÀ: SEROFREQUENCY AND SEROINTENSITY OF TG

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AUTHOR`S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Infection with *Toxoplasma gondii (Tg)* in the central nervous system causes behavioural, personality changes and psychotic symptoms mimicking schizophrenia, a psychiatric illness with unknown aetiology. The aim of this study was to determine the seroprevalence, serointensity of *Tg* IgG, IgM antibodies and *Tg* DNA in patients with Schizophrenia and its relationship with demographic profile and clinical factors. This was a cross-sectional study examining the role of *Tg* in patients with Schizophrenia attending the Sg Buloh Hospital and University Malaya Medical Centre (UMMC) during a period from July 2010 to December 2012. A total of 156 subjects consisting of 57 patients with chronic Schizophrenia, 44 acute Schizophrenia and 55 healthy individuals participated in this study. The demographic profiles, risks and clinical factors were examined to determine the positivity and intensity of *Tg* IgG, IgM antibodies and *Tg* DNA. The seropositivity and serointensity of *Tg* antibodies were measured using Enzyme Linked Immunosorbent Assay (ELISA) while positivity and intensity *Tg* DNA were measured using Real Time PCR. The seropositivity of IgG antibody were significantly higher in all Schizophrenia, remission and acute Schizophrenia patients than control (p<0.001). The serointensity of IgG antibody were also significantly higher in all Schizophrenia, remission and acute Schizophrenia patients than control (p<0.05). The positivity of DNA *Tg* were also significantly higher in all Schizophrenia, remission and acute schizophrenia than control (p<0.05). The intensity of *Tg* DNA were also significantly higher in all Schizophrenia, remission and acute Schizophrenia patients than control (p<0.05). This study suggests that *Tg* has a significant role in Schizophrenia.

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CHAPTER ONE

INTRODUCTION

1.1   RESEARCH BACKGROUND

1.1.1   Schizophrenia

In 1890, Emil Kraeplin, a German psychiatrist first recognized and described Schizophrenia as a group of illness characterized by catatonia and hebephrenia/disorganization that begun during adolescence and invariably lead to social deterioration. Kraeplin proposed that this illness was a brain disease, which he named the disease as dementia praecox and carried a poor prognosis. Later, Eugene Bleuler, a Swiss psychiatrist in 1911 worked on the concept of dementia praecox and further classified the symptoms of this illness based on a fundamental of 4A-s (Ambivalence, Autism, inappropriate/flatness of Affect or looseness of Association). Kurt Schneider in 1959 later identified more psychopathology and symptoms, which included the positive symptoms namely delusions and hallucinations. He further classified them into Schneiderian First Rank Symptoms of Schizophrenia. These symptoms/psychopathology were later incorporated into International Classification of Diseases (ICD) and Diagnostic and Statistical Manual (DSM) classifications of Schizophrenia.

Schizophrenia is a chronic major debilitating mental illness characterized by disturbances in effect, thought, emotion, mood and behaviour. It is associated with changes in personality, deterioration in function and intelligence, poor judgement and insight (Ainsah & Osman, 2013). According to World Health Organization (WHO), "Schizophrenia" is referred as a severe mental disorder, which is characterized by profound disruptions in thinking, affecting language, perception, and the sense of self. Schizophrenia can occur at any age from 7 to 70, but more prevalent in late adolescent or early adulthood and mostly in the age group of 13-35 years old. The prevalence of Schizophrenia is approximately 1% and affects more than 21 million people worldwide (WHO, 2014).

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