

***Microsporidia* infection among various groups of the immunocompromised patients**

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Abstract. While information with regards to the bacterial and viral infections are commonly available among clinicians, data on parasitic infection, particularly *Microsporidia* among immunocompromised patient is currently lacking in Malaysia. This study was conducted to determine the prevalence of *Microsporidia* among a various group of immunocompromised patient. Two hundred and eighty-eight archived stool samples were examined for the presence of *Microsporidia* with Gram-Chromotrope Kinyoun staining method. The overall prevalence of *Microsporidia* was 29.2 % (84/288; 95% CI=24.2-34.5). The end-stage renal failure (ESRF) patients (32.1%) recorded the highest infection rate, followed by cancer (26.2%), human immunodeficiency virus (HIV/AIDS) (22.6%) and acute gastroenteritis (AGE) (7.1%). Meanwhile, organ transplant recipients and autoimmune disease patients recorded the lowest prevalence rate (6.0%). Other intestinal parasites were *Strongyloides stercoralis*, *Trichuris trichiura*, *Ascaris lumbricoides* and *Cryptosporidium* species. Diarrhoea was the most common symptoms among patients with microsporidiosis. The present study showed that the prevalence of *Microsporidia* infection was relatively high among immunocompromised patients. This finding highlighted the importance to include detection of microsporidia infection as a routine differential diagnosis in immunocompromised patients, which serves the benefit of treatment to the patients.

INTRODUCTION

Opportunistic infections are diseases with a facultative pathogenic organism that includes a wide range of viruses, bacteria, and parasites. Such pathogens are capable of causing disease when the host's resistance is lowered, by other diseases or drugs such as in immunocompromised patients. The immunocompromised group comprises a wide range of patients with disordered immune systems including acquired immune deficiency syndrome (AIDS), human immunodeficiency virus (HIV), patients on medical treatment such as chemotherapy, organ or bone marrow transplantation.

The opportunistic intestinal parasites are one of the major causes of uncontrollable debilitating illness including diarrhoea in human. The infection is self-limiting in

immunocompetent hosts, which readily clear the parasites. However, persistent diarrhoea and severe malabsorption are common clinical presentations among immunodeficient host. Reports indicated that diarrhoea occurs up in 60.0% of immunocompromised patients in developed countries and in approximately 90.0% in developing countries with opportunistic intestinal protozoa playing major roles (Kulkarni *et al.*, 2009). The variation in the prevalence may be because of differences in the diagnostic techniques, geographical location, socioeconomic status, immunity status as well change in personal and environmental hygiene (Teklemariam *et al.*, 2013).

Microsporidia are recognized as one of the most common emerging opportunistic parasitic pathogen among immunodeficient