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قسم

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شبكة المعلومات الجامعية

بالرسالة صفحات لم ترد بالأصل

Evaluation of point of care testing for Diagnosis of Human Giardiasis

Thesis
Submitted for Partial Fulfillment of MD Degree in Clinical Pathology

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To Dana,

And to my all supportive

friends and family.

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List of Abbreviations

Abb.	Meaning
EIA	enzyme immunoassays
ELISA	enzyme-linked immunosorbent assays
FDA	Food and Drug Administration
G. lamblia	Giardia lamblia
ICT	immunochromatography
IDSA	Infectious Diseases Society of America
IFA	Immuno Fluoressence assay
IgE	immunoglobulin E
OD	optical density
RDTs	rapid antigen detection tests
RFLP	restriction fragment length polymorphism
SAF	sodium acetate–acetic acid–formalin
sIgA	Secretory IgA
VSP	variant surface proteins

Introduction

INTRODUCTION

Giardia is a unicellular flagellated parasite that infects a wide range of vertebrate hosts, including humans. Infection is usually transmitted through ingestion of infective cysts ***(Robertson, 2013).*** Infection occurs worldwide, but mostly affects populations in the developing countries. Giardiasis is commonly asymptomatic but mild to moderate self-limiting diarrhea occurs in some cases. In other cases, diarrhea may be severe, prolonged, and even life threatening ***(Hawash et al., 2016).***

In particular, children in resource-poor countries can be severely affected by *Giardia* infections, which may lead to significant malabsorption, weight loss and growth retardation ***(Halliez and Buret, 2013).*** Some survey data indicates that in industrialized countries, the prevalence ranges between 2% and 5% and the rate for developing countries ranges from 20% to 30% ***(Sanchez et al., 2017).***

The diagnosis of *Giardia* infection relies totally on laboratory diagnosis. Examination of feces with classical wet mount microscopy is frequently employed as a rapid, cheap, and simple method. Microscopy, though gold standard, offers low sensitivity as fecal shedding of parasites is usually intermittent and sometimes load is very low and it depends to a great extent on the skill and experience of laboratory personnel ***(McHardy et al., 2014).***

Commercially available ELISA kits are found to be rapid and effective method to diagnose Giardiasis by detecting *Giardia* associated antigens ***(Jahan et al., 2014).*** In addition, rapid immunochromatographic-based kits have been developed and became widely used for detection of *Giardia* antigens in stool samples. These lateral flow immunoassays can be accomplished within 10 minutes ***(Hawash, 2014).*** Molecular techniques as PCR are also available; however, in contrast to microscopy it needs a high-tech laboratory, which is even more of a challenge for diagnostic laboratories within endemic countries ***(Meurs et al., 2017).***