

# Detection of *Giardia intestinalis* assemblages in formalin fixed stool samples collected from school children in the Ghazni Province, eastern Afghanistan

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Afghan community is an example of a population with estimated a high index of intestinal parasitic infections. Limited diagnostic capabilities of the national healthcare, reports on the prevalence of diseases in the general population of Afghanistan are rarely laboratory confirmed. According to U.S. sources as many as 90% of the population may be infected with at least one intestinal parasite.

The aim of this study was to estimate the prevalence of *Giardia intestinalis* assemblages known as pathogenic for humans (A and B) in formalin fixed feces samples collected in 2014 from children from the Jahan Malika High School in the Ghazni Province, eastern Afghanistan.

Thus, 44 stool samples selected by microscopic investigation (in which cysts of *G. intestinalis* were detected) were tested with Real-time PCR targeting 18S rRNA gene in order to confirm presence of the DNA of *G. intestinalis*, and then genotyped using Real-time PCR based on *G. intestinalis*  $\beta$ -giardin gene.

The DNA of *Giardia intestinalis* was found in all 44 samples investigated; genotyping was successful in 27 (61.36 %) of them. Of these, assemblage A was detected in 8 and assemblage B in 16 stool samples. Additionally, three samples were contaminated with both assemblages.

Results of the study show that genotype B predominates in the investigated population of Afghan children. Moreover, we demonstrate that Real-time PCR based on short DNA fragments may be successfully applied for the detection of the DNA of parasites in formalin fixed feces.

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