

Molecular Detection of Fancy Birds Parasites for Clinical Diagnosis and Epidemiology

Muhammad Fiaz, Qamar, Kazim Ali, Muhmmad Arfan Zaman and Farhan Ahmad Atif
College Of Veterinary and Animal Sciences (CVAS), Jhang; Sub-Campus-University of
Veterinary and Animal Sciences, Lahore

The parasitic infections are significantly increasing especially over the past few years. The faecal and blood smears microscopic examination are routinely used protocol for detection of parasites. As microscopically, we can differentiate the genus and their related species, so more accurate diagnosis can be made through real-time PCR assay. The technique was used for DNA extracted whole-blood specimens for detection of parasites. This method was more sensitive, rapid, and precise for parasitic finding in fancy birds and human being specimens.

New diagnostic tools for the detection of fancy birds parasites are essential for the monitoring of altering epidemiology of parasites, mainly among urban areas. This Real-time PCR along with microscopy aim for the identification of parasites in fancy birds. These molecular techniques aid in diagnostic methods for further research about the detrimental effects of parasitic infestation on birds and human beings.

Methods: A comparison of conventional microscopy and real-time PCR assay was carried out for the comparison of detection rate of parasites from blood and faecal materials gathered from the 6 different species of birds and human beings. Real-time PCR optimization and cycle threshold was performed to compare the sensitivity and specificity of faecal microscopy and PCR. A species-specific PCR assay was used to categorize the contribution of different parasitic species in infections.

Conclusions: Although microscopy is widely used routine practice in field conditions for the quick diagnosis of infestation clinically but molecular diagnostics approaches like PCR present a more sensitive source of identification of parasites. Probable role of these parasitic infections to fancy birds and human beings is serious to evaluate and determine so it is necessary to be performed. The possible applications of the concerned technique in certain epidemiological research and strategic planning for control programmes will also be addressed. The main aim of this study was to determine a parasitic species, prevalence and infection rate in selected fancy birds. We will correlate our data with morphologic findings for different parasite developmental stages, host phylogeny, and overall taxonomic relations within different fancy birds.