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Summary

A total of 500 fish of cultured and wild *O. niloticus* which appeared clinically diseased were used for this study.

Mycological examination was done to isolate *I. hoferi* fungus and found that the prevalence of infection was 58.8% in the examined fish, where that the prevalence in the infected cultured fishes were 66%, while was 30% in the infected wild fishes. With respect to the localities, the fish collected from Kaluobia showed higher infection rate (68%) than that obtained from Sharkia (49.6%).

The higher rate of infection was in the winter season (68.1%), then the autumn season (63.33%), while the lowest infection rate was in the summer season (37.78%).

The isolated fungus was recovered in a high incidence from organs richly supplied with blood (liver, kidney, spleen, heart). Moreover the heavy weighted fish and longer fish had highly rate of infection.

The most common external signs appeared as slight to severe darkening of the skin, easily detached scales, exophthalmia and cloudy eyes and errosion in the caudal fin. In some cases abdominal swelling, can be detected.

Postmortem lesion revealed the presence of white nodules in the liver, kidney, spleen and intestine, congested spleen and haemorhagic kidny and also we found enlargement in liver, spleen and corregated intestine.

The results of mycological examination of the naturally infected fish with *I. hoferi* showed the presence of different viable stages characteristic to the fungus spreading in the tissues of liver, kidny, spleen, intestine, ovary and heart. The fungus was isolated by cultured in (MEM-10) or on S.D.A, then the identification of the fungus under the microscope by using the morphological properties of fungus on slide, stained by (LPCB) stain and also by noticed its characteristic growth of the cultured fungus in the test tubes.

This study revealed that the lack of clinical signs and or macroscopic nodules in the infected fish do not indicated that the fish is free from infection, while the mycological examination (isolation and identification) more accurate for detecting the infection in the fish.

The result of experimental infection also investigated that the experimentally infected fish via mouth rout can be infected by using heavily infected minced organ or by infected MEM-10 at (pH 7.0 and at pH 3.5), showing signs of the disease and infected fish had nodules of the fungus in the internal organs of the examined fish and the mortality rate reached 20 - 30%. But when using a synthetic cortizon as inmuno-supressant agent the mortality rate reached 80- 100%.

The histopathological examination of the internal organs of Tilapia naturally and experimentally infected with *I. hoferi* revealed the presence of multiple characteristic granulomas within the examined organs particularly liver, kidneys and spleen. Degenerative changes in both hepatocytes and renal epithelium with splenic congestion were seen.

Moreover, gastroenteritis with inflammatory cellular infiltration mainly lymphocytes and eosinophilic granular cells was also seen. There were as strongly PAS positive mycotic elements (resting spores) detected in hepatic and splenic tissues. Moreover PAS positive spores were detected in the intestinal mucosa, submucosa and lamina propria. These spores within mucosa appeared rounded and some of them had short hyphae representing the beginning of germination. While within submucosa the spores were spherical in shape. These changes may explain the pathogenesis of *I. hoferi,* where the hyphae of germinating spores were responsible for invasion of the intestinal mucosa.