



Seroepidemiological studies on the role of fish in transmitting some zoonotic diseases to man

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Samples were collected from a total of 300 fish of tilapia species beside 73 humans dealing with fish in the period September /2005 through September /2006 in Beni-Suef and El-Fayoum Governorates, Egypt. Examination for the presence of bacteria and parasites was conducted.

Fish samples were obtained from two farms, one in El-Fayoum and the other in Beni-Suef Governorates, as well as from markets in Beni-Suef and El-Wasta localities. A questionnaire was constructed and data were collected about the farms and the macroscopic appearance of the examined fish.

The collected samples included surface swabs, samples from gills and scales and, additionally, samples from muscles and internal organs.

Human chosen for this study were those in common contact with fish. They included two groups; farm workers and fish sellers. A questionnaire was filled out for each case including personal and epidemiological data. The collected samples were hand swabs (73) and stool samples (13).



Trails for bacterial and parasitological isolation using the conventional bacteriological and parasitological methods were conducted on all samples. Moreover, experimental infection in cats was performed aiming to obtain the adult forms of the recovered encysted metacercaria.

Bacteriological examination of the fish samples revealed an isolation rate of 30.3%. The isolated microorganisms were *Staph-aureus* (4.3%), *A. hydrophila* (9.7%), *Proteus spp.* (3%), *Shigella spp.* (1.7%), *P. aeurogenosa* (2%) and *P. fluorescense* (2%).

The occurrence of isolated microorganisms in examined farms and markets accounted for 28% and 30% in farm I and Farm II and for 36% and 30.7 % in El-Wasta and Beni-Suef markets, respectively, with highest rate of isolation during warm months.

The parasitological examinations of fish samples indicate that the rate of infestation was 24.3% for external parasites and 26.7% for the encysted metacercaria. The small fish were more infected with the encysted metacercaria. The predilection seat of the encysted metacercaria was in the oral cavity (70%) and middle third of fish muscles (68.8%), which proved by the macroscopic examination and experimental infection of cat to be



C. complenatum, *Het. Heterophys*, *Prohemostomum vivax*,
Centrocestus aramatus and *Haplorchis pumelio*.

Bacteriological Examination of human samples revealed that 9 of 73 (13.7%) hand swabs and 3 of 13 (23.1%) stool samples were positive. The isolated microorganisms were *Staph-aureus* (12.3%) and

A. hydrophila (23.1%). On the other hand, out of 13 stool samples examined, 1 (7.7%) demonstrated a positive result indicating the presence of *E.hystolitica* cyst.

It was notable that *Het. hetrophyes* eggs were not isolated from any of the human samples, although their cysts were recovered from fish muscles.

The epidemiological factors involved in animal and human fish borne pathogens in Beni-Suef Governorate and the actions as well as measures that can be taken to minimize the public concern were discussed.