The occupational health impact from some microbiological hazards on municipal sewage workers in Alexandria, Egypt

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Abstract

Background: Wastewater contains micro-organisms (bacteria, viruses, fungi and parasites) derived from human and animal excreta that can cause infections especially if work practice and personal protective equipment don't protect workers from contacting these microbes.

Aim: The aim of this present work was to study the occupational health impact from some microbial hazards on municipal sewage workers.

Methods: A cross-sectional study was carried out in 2016, on workers from different sectors in Alexandria Governorate, Egypt. Stool samples collected were subjected to the Kato-Katz, Ether concentration techniques, Jones' Media culture, modified Ziehl-Neelsen and quick hot Gram-chromotrope staining. Stool samples were also tested for *H. pylori* Ag. Serum was separated from blood samples to detect HCV antibodies and HBVsAg.

Results: Out of the 410 workers examined, 56.8% were suffering from intestinal parasitic infections (IPI), 12.2% had hepatitis mainly HCV (9.8%) while 31.2% harbored *H. pylori* Protozoal infections amounted to 54.6% while 5.9% only had helminthic infections. *Blastocystis hominis* infection was the most prevalent (46.8%) followed by *Cryptosporidium*, *E. histolytica* and microsporidium (15.6%, 11.7% and 7.8% respectively). 25.6% of workers presented with single intestinal parasitic infection while 30.5% had multiple IPI. Significant higher rates of IPI and *H. pylori* were observed among workers frequently contacting sewage. Also, IPI was statistically higher among young workers (<40 years) while hepatitis was significantly more prevalent among those from rural areas.

Conclusions: Sewage workers were found to be vulnerable to infections (70.5%), particularly IPI. Our findings call for the importance of the self- protection measures that should go hands-in-hands with regular investigation and treatment.

Image

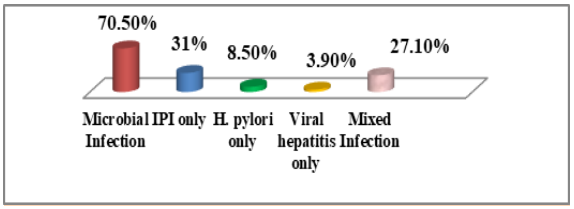
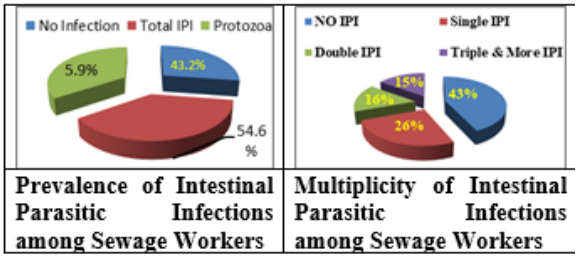
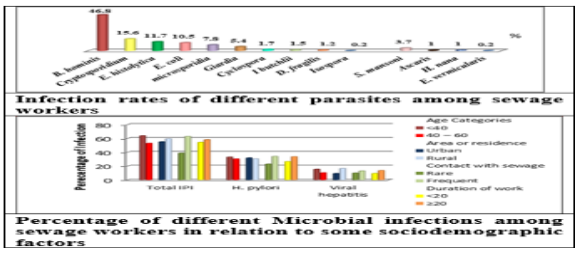


Figure: Prevalence of Microbial Infections among Sewage Workers



Prevalence of Intestinal Parasitic Infections among Sewage Workers

Multiplicity of Intestinal Parasitic Infections among Sewage Workers



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1. Strunz E C, Addiss D G, Stocks M E, et

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2. Sheikh S H, Aziz S, William G P, et al (2014) Hepatitis prevalence of epidemic magnitude sanitary workers in Pakistan. IOSR-JDMS. 13 (6): 58-61.

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4. Dyab A K, El-Salahy M, Hanan M, et al (2016) Parasitological studies on some intestinal parasites in primary school children in Aswan Fovernoraye Egypt. J Egypt Soc Parasitol (JESP). 46 (3): 663-672.

5. Shehata A I, Fassanein F (2015) Intestinal parasitic infections among mentally handicapped individuals in Alexandria, Egypt. Ann Parasitol. 61 (4): 275-281.



Biography

Faika Hassanein is a Lecturer of Microbiology and Immunology in the Faculty of Pharmacy and Drug Manufacturing-Pharos University in Alexandria (PUA). She is a Coordinator in the Quality Assurance Center in the PUA. She has awarded as Distinguished Scientist in VIRA-India. She has her expertise in diagnosis of the parasites especially opportunistic parasites. She has experience in the public health and prevention and control of parasitic infections. Also, she is interested in Immunology, Biotechnology and Molecular Biology especially Molecular Parasitology. She had studied Biochemistry, Forensic Chemistry, Analytical Biochemistry, Tropical Health (Parasitology and Medical Entomology) and now she is studying Biotechnology.

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Notes/Comments: