

Background

Parasitic infections are a main public health dilemma especially in developing countries. The immune system plays an integral role in controlling and clearing parasitic infections. Many of chemotherapeutic agents used in treatment damage the bodies' anatomical barriers. Others cause damage of all rapidly dividing cells including blood cells or cause suppression of the bone marrow. While treatment with radiation, even if administered to limited target volume, causes immune dysfunction due to a decrease in the T and B lymphocytes counts in peripheral blood. For these reasons, infections have long been documented as one of the most significant complications of therapy and a major cause of mortality among cancer patients.

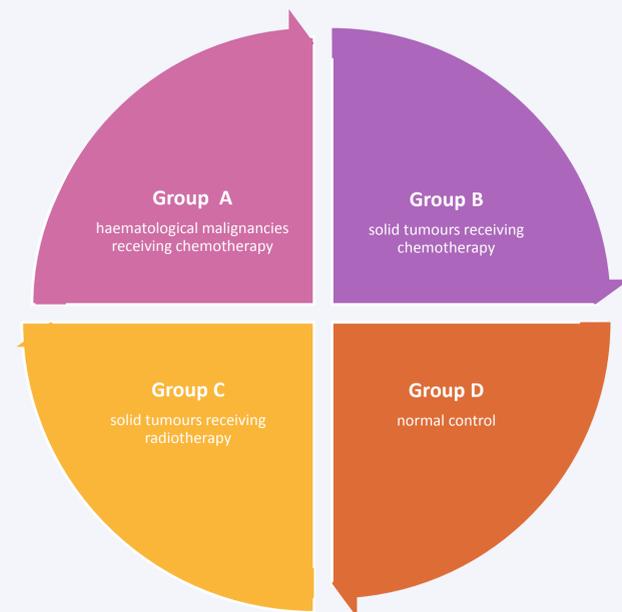
Objectives

This study was performed to estimate the prevalence of enteric opportunistic parasites in Egyptian cancer patients.

Patients and Methods

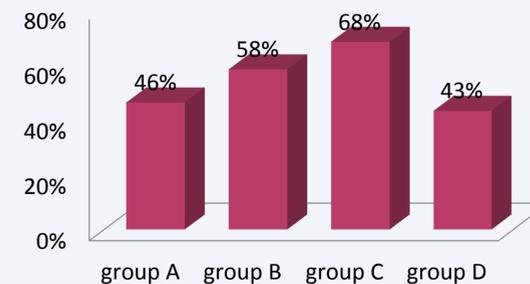
200 patients were included in the study. and divided into 4 groups.

Each patient provided 3 stool samples. Different techniques were used to detect parasites including direct smear, ethyl-acetate concentration staining with modified Ziehl Nelson and modified Trichrome stains, culture on Jone's media and culture on Nutrient Agar and Harrada Mori.

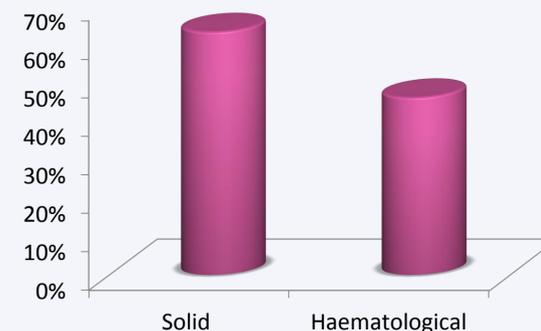


Results

Opportunistic parasites were more prevalent in Cancer patients (57%) than in the control group (43%). This could be attributed to the reduction in local and cell-mediated responses in the immunosuppressed patients that may favor the establishment of some organisms.

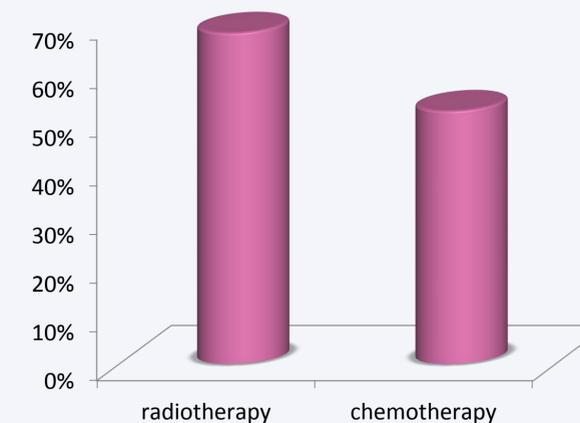


Patients having solid organ tumors had significantly higher rates of infection than the ones who have haematological malignancies (63% versus 46%).



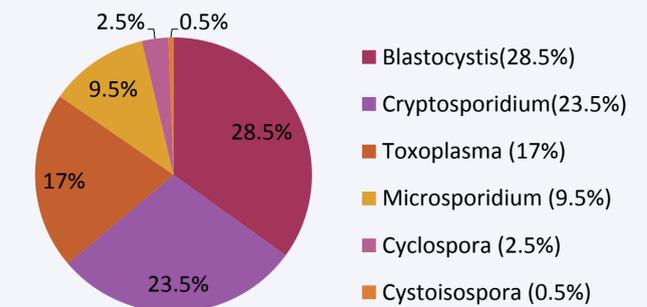
Results (cont.)

Patients treated with radiation had higher rates of infection than those treated with chemotherapy (68% versus 52%). This difference is most probably due to different mechanism of action of radiation than chemotherapy. Radiation causes local destruction of the DNA of rapidly dividing cells in the irradiated area only. While chemotherapy causes systemic destruction of the DNA of rapidly dividing cells of the whole body. This includes the GIT mucosa which is the preferred site of residence of most of the opportunistic parasites.



Results (cont.)

Blastocystis hominis was the most prevalent protozoon in neoplastic patients (28.5%) followed by *Cryptosporidium spp.* (23.5%) then *Microsporidium spp.* (9.5%) then *Cyclospora cayetanensis* (2.5%) while the least opportunistic parasite detected was *Isospora belli* (0.5%). *Strongolyides stercolaris* wasn't detected in any of the examined samples.



Conclusions

This study could be of vital importance in endemic areas, where routine survey for parasitic diseases especially enteric opportunistic parasites should be done in cancer and immune suppressed patients.