SUMMARY AND CONCLUSION

The present study aimed to declare the effect of radiation therapy on the immune response of patients with laryngeal and pheryngeal carcinoma in trial for rationalizing a regimen and sparing the patients any deleterious effect.

In the present work, 10 patients with laryngeal pharyngeal carcinoma were subjected to thorough clinical examination , histopathological study for tumour tissue mainly as regard to the degree of cellular reaction (lymphocyte, plasma cell infiltrate) and laboratory tests including :

a- Blood picture .

b- Quantitative and qualitative assessment of cell mediated immunity by :

   i - Counting of the Rosette forming cells (T-cells) in the peripheral blood .

   ii - Dinitrochlorobenzene (DNCB) and tuberculin (P.P.D) skin tests .

c- Quantitative and qualitative assessment of humoral immunity by :

i- Assessment of B - cells by immunoflourescent technique.

ii- Quantitative determination of serum immunoglobulins

IgG,IgA and IgM using the radial immunodiffusion medthod.

Also, ten normal cases were subjected to the laboratory tests except those of skin tests .

All the investigations for cancer patients were done before and at different dosage levels during the course of irradiation .

Patients were classified according to the irradiation response into : a - 1st group (7 cases) showing no improvement . They were stopped dosafe at 4000 rad . , b- 2nd group (3 cases) showing good response to radiation therapy . They continue to a full course of treatment up to 7000 rad . This 2nd group of patients were subjected for investigations at 5000 rad and after the full course of 7000 rad .

This study demonstrated a statistically significant decrease in the mean value of T - cell % forming Rosette for the cases of the first group after a dose of 4000 rad than that before radiation therapy . In patients showing improvement with radiation treatment (2nd-group) the mean value of T - cell % - Rosette after a dose of

5000 rad shows a statistically significant increase than that before treatment . Also, with completion of a full cancericidal dose of 7000 rad there is a statistically significant decrease in the mean value of T - cell % - Rosette than that after 5000 rad . As regard to the difference between the mean value of T-cell % - Rosette before treatment and that after completion of the full course, 7000 rad for the 2nd - group of patients, there is no statistically significant change .

Immune responsiveness for D.N.C.B. and P.P.D. skin tests immediately after radiation therapy shows no change than that before treatment . All cancer patients before treatment had a positive response to P.P.D. and a negative one to D.N.C.B. In patients showing improvement with radiation treatment (2nd gp) , no one which had a negative reaction for DNCB converted to a positive one after completion of the treatment .

Peripheral blood B - cell % showed no statistically significant change after radiation therapy whether for those with had response (1st gp) after 4000 rad or those with good response (2nd gp) after 5000 rad or 7000 rad.

Serum immunoglobulin concentration levels shows a

statistically significant increase in serum immunoglobulin IgG and IgA concentration levels in cancer patients (1stgp) before than those of control group . Also, after 4000 rad, 1st gp patients showed a significantly increase in IgA and IgM concentration levels than those of normal control group. Patients of the 2nd gp., showed no statistically significant difference between their immunoglobulins IgG , IgA and IgM concentration levels and those of normal control persons whether before or after a full dose of 7000 rad . Although, there were no statistically significant change in serum immunoglobulin IgG, IgA and IgM levels of cancer patients during the course of radiation treatment whether those with bad response (1st gp) before and after 4000 rad or those with good response (2nd gp) before and after 5000 rad or 7000 rad, cancer patients with bad response showed a decrease in IgG level and increase in IgA and IgM levels after 4000 rad, than that before treatment . Patients with good response showed a decrease in IgG and IgM levels after a dose of 7000 rad than that levels beofe treatment .

From the previous findings, it can be concluded that :

1- Cancericidal doses of cobalt 60 radiation have no effect upon the immunoprotective mechanism of immunologically competent cells. The improvement after irradiation of

the tumours suggests that the inhibitory mechanisms upon
the immunologically competent cells also originates in the
tumours destroyed by radiation therapy .

2- T - lymphocytes is the mainly cell responsible for the
immunologic anticancerous defense mechanism.

3- A connection exist between curability and lymphocytes
at tissular level. Lymphocytes are in dynamic equilibrium
with circulating blood.

4- T - Rosette test could be usefully incorporated into an
immunologic profile used for determination of the overall
immune status of each patient with cancer and by its
serial measuring through a course of treatment,a more
rational treatment sequence may be developed .

5- There is no correlation between the skin tests (D.N.C.B.
and P.P.D) and the clinical course, of the disease in all
the studied groups. No correlation has been existed
between the peripheral T-lymphocyte and responsiveness
for skin tests .

6- On immunologic bases we recommended a dose of 5000 rad
oas a preoperative dosage in cases of combined treatment.

7- We recommended further studies for evaluating the role

of T - cell subsets through monoclonal antibodies
(suppressor, helper, killer) as well as the role of
other cells contribute the cell mediated immunity .