

LETTER TO THE EDITOR

"T" LYMPHOCYTES IN BREAST TUMORS

(Received on November 19, 1991)

Human peripheral blood T lymphocytes, which are mainly responsible for cell mediated immunity, can be identified by their ability to form rosettes (E Rosettes) with sheep red blood cells. These cells play a vital role in combating intracellular organisms like tubercle bacilli and brucellosis. They are also responsible for rejection of transplanted tissue and play a key role in immuno-surveillance. Malignant cells have a different antigen which normal cells do not contain and hence the normal immune mechanisms will reject these mutant cells by producing activated T lymphocytes against these antigens (2). This study was undertaken to enumerate the T cells in breast tumor patients so as to differentiate the early malignant tumors from benign tumors without biopsy.

T lymphocytes were estimated in human peripheral blood by using the E rosette technique (3) in twenty normal females of age group 40-60 years. Sixty six patients, 40 to 60 years of age, having breast tumor were selected with the following clinical entities, viz. fibroadenoma, ductal and non-ductal carcinoma at random, and their complete clinical history was recorded. The T cell counting was done by the same investigator for all the cases in this study, who was not aware of the source of the specimen. The results were analyzed by Student's t-test for statistical significance.

Our results show (Table I) that the mean T cell number in control group was 41.1 ± 6.5 and in fibroadenoma breast, it was 44.73 ± 7.06 which was not significantly different. However, there was a significant decrease in T cell count in carcinoma breast.

TABLE I : T cell count in breast tumor patients.

Group	n	T cell count	
Control	20	41.1 ± 6.5	
Fibroadenoma	30	44.73 ± 7.06	NS
Ductal carcinoma	9	32.55 ± 9.67	**
Non-ductal carcinoma	11	28.00 ± 5.40	***

P<0.01 ; *P<0.001 (compared to the control group)

It has been already shown that immunological forces play a protective role in suppressing the clinical appearance of neoplasm and macrophages have been repeatedly demonstrated as potentially effective tumor cell destructors both *in vivo* and *in vitro* (1). This study has shown that malignant tumor bearing patients tend to have a lower T lymphocyte population in the peripheral blood than those with benign tumors of the breast.

Although the role of immuno surveillance by lymphocytes in the genesis of cancer is still unclear, two observations merit consideration. It has been reported that some normal subjects with low peripheral T cell count developed cancer, many years later, and in some families with high incidence of cancer, one may find healthy members with low T cell count (4). All these observations and correlations suggest that T cell rosettes in peripheral blood can be used as an index of immuno-surveillance in breast cancer and probably in other forms of malignancy.

S. RAMANI AND A. V. SUBHASHINI*

Department of Physiology,
Stanley Medical College, Madras - 600 001

*Corresponding Author

REFERENCES

1. Eli Benjamini, Rennick MD, Stewart Sell. Tumor Immunology In: Sutes DP Stobo JD Fudenberg HH and Wells JV Eds. Basic and Clinical Immunology. *Lange Medical Publications, USA-Maruzen Asia-Singapore* 1984; 223-240.
2. Ivon M Roitt. Essential Immunology. *Blackwell Scientific Publications (ELBS)* 1988; 231-232.
3. Waller CA, MacLennan ICM. Analysis of Lymphocytes in blood and tissues. In : Thompson RA Ed. Techniques in clinical Immunology. *Blackwell Scientific Publications* 1977; 170-195.
4. Wybran J, Fudenberg H. Thymus derived Rosette forming cells in human disease states: Cancer, Lymphoma, bacterial and viral infections and other diseases. *J Clin Investigations* 1973; 52: 1026-1032.

ANNOUNCEMENTS

Prof. B.K. Anand, the doyen of Indian physiologists, and a Founder Member of the Association of Physiologists and Pharmacologists of India (APPI), will be 75 this year. The following series of activities have been planned in his honour this year by his students and admirers.

- I. INTERNATIONAL CONFERENCE ON SLEEP-WAKEFULNESS, 9-11 SEPTEMBER, 1992, NEW DELHI, INDIA.
The Scientific Programme includes Symposia, Updates and Posters on basic and clinical aspects of sleep.
For further details, please contact:
Dr. V. Mohan Kumar, Organizing Secretary, International Conference on Sleep-wakefulness,
Department of Physiology, New Delhi - 110 029, INDIA, Fax No. 91-011-686 2663.
- II. INTERNATIONAL SYMPOSIUM : HYPOTHALAMUS - A HOLISTIC VIEW, 17-18 SEPTEMBER 1992.
Venue : All India Institute of Medical Sciences, New Delhi - 110 029, INDIA
For further details, please contact :
Prof. Usha Nayar, Organizing Secretary, International Symposium, Hypothalamus: a holistic view,
Department of Physiology, All India Institute of Medical Sciences, New Delhi -110 029, India.
- III. GOING ABOUT RESEARCH (THE GAR SYMPOSIUM) - 15 NOVEMBER 1992
Venue : All India Institute of Medical Sciences, New Delhi - 110 029
The one-day Symposium will be devoted to lectures and discussions on how to plan, conduct and report biomedical research. The organizers regret, it will not be possible to arrange accommodation for the participants.
Registration : Before 15 Sept. 1992 - Rs. 100/-
After 15 Sept. 1992 - Rs. 125/-
Payment may be made by demand draft payable to "The GAR Symposium" at New Delhi.
For further information and preliminary registration (free of charge), send your name and address to :
Prof. R. L. Bijlani, Organizing Secretary, The GAR Symposium, Department of Physiology,
All India Institute of Medical Sciences, New Delhi - 110 029
- IV. XXXVIII ANNUAL CONFERENCE OF THE ASSOCIATION OF PHYSIOLOGISTS AND PHARMACOLOGISTS OF INDIA - DECEMBER 27-29, 1992 AT NEW DELHI.
For further details, please contact :
Dr. B.N. Mallick, Organising Secretary, XXXVIII Annual Conference of APPI,
School of Life Sciences, Jawahar Lal Nehru University, New Delhi - 110 067.
- V. FIFTH ANNUAL WORKSHOP ON ASSESSMENT IN MEDICAL EDUCATION (PHYSIOLOGY) DECEMBER 30-31, 1992 AT NEW DELHI.
For further details please contact :
Dr. B. K. Kapoor, Organising Secretary, 5th Annual Conference on Assessment in Medical Education (Physiology),
Department of Physiology, All India Institute of Medical Sciences, New Delhi - 110 029.