Ancient Science of Life Vol. VIII, Nos. 1. July 1988, Pages 41-43

PRELIMINARY STUDIES ON THE IMMUNOPOTENTIATING ACTION OF SOME AYURVEDIC PREPARAIONS

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Received: 28 December 1986 **Accepted: 28 July 1987**

ABSTRACT: *Ten healthy controls, 9 Rheumatoid Arthritis patients and 5 cancer patients were studied for T and B cells in peripheral circulation. T cell count in cancer patients showed a slight enhancement after receiving Ayurvedic Treatment; but the B cell count remained the same. In Rheumatoid Arthritis patients no significant change was noticed either in T cell or cell count.*

INTRODUCTION

The abundance of literature in Ayurvedic system of medicine affords ample scope for research. Cancer may be a manifestation of the break down of immune surveillance. Some ayurvedic preparations are well known for their boosting of immune resistance in a man. These drugs may be virtue of their immunostimulating action be potential candidates in cancer therapy. This study is being undertaken to assess the effect of these drugs or combination of drugs on the immune status of patients.

MATERIALS AND METHODS

Patients attending Ayurveda Wing of Amala Hospital for treatment of cancer and rheumatoid arthritis were assessed for their immune status. Cell mediated immunity in these patients, at start of the treatment and during treatment was studied by the following parameters: (a) T and B lymphocyte count, (b) Delayed hypersensitivity test using **PPD** skin test. These patients were not received any prior treatment, 12 controls, 9 cases of rheumatoid arthritis and 5 cancer cases 4 of which were followed up were included in the present study.

Enumeration of T and B Lymphocytes: In man T cells may be identified by their ability to form spontaneous rosettes with sheep erythrocytes. Sheep erythrocytes were collected in Alsevier's solution and stored in fridge for less than one week. The SRBCs were washed in 0.85% saline three times and made upto 1%. Blood samples from patients collected in heparin, diluted to 1:2 with sterile saline was carefully layered over Ficoll-Hypaque and centrifuged at 200 rpm for twenty minutes. The lymphocytes appearing as a white ring at the interface were carefully removed with a Pasteur pipette, washed with saline twice and count adjusted to 2×10^6 cells/ml. Equal volumes of SRBC (1%) and purified lymphocytes were mixed and centrifuged at low speed; and incubated at 4^0 C over ice water bath for 30 minutes. The pellet was resuspended gently and one drop of toludine blue (1%) was added. T lymphocytes which have receptors for SRBC form spontaneous rosettes. The total number of rosettes as well as free lymphocytes were counted and percentage calculated.

TABLE-1
T and B Cell count in patients before and after treatment

Sl.No	Normals		Sl.No	Rheumatoid arthritis patients				Sl.No	Cancer patients			
				Before treatment		After treatment			Before treatment		After treatment	
	% T cells	% B cells		% T cells	% B cells	% T cells	% B cells		% T cells	% B cells	% T cells	% B cells
1.	77	32	1.	69.4	36	68	26.5	1.	63	23.5	71	26
2.	70.4	37	2.	63.6	26	67	22.5	2.	59.4	25.8	64.7	24.8
3.	73.6	30.3	3.	68	30	65.3	26.5	3.	71	22.3	66.3	24
4.	71.7	17.3	4.	58	31	61.5	29	4.	62.5	27	64.6	22.3
5.	76	25.8	5.	62	27	62.5	25.5	5.	67.5	26.5	--	--
6.	74.8	23.5	6.	72	19.5	68.5	22.3					
7.	73.2	32	7.	66	22.5	62	24					
8.	76.9	30	8.	73	21.5	68.5	27.5					
9.	77.2	19	9.	67.79	24.2	73	23.5					
10.	67	28										
Mean	73.10 ±	28.93 ±		66.64 ±	26.40 ±	66.25 ±	25.50 ±		64.28 ±	25.02 ±	66.78 ±	24.26 ±
± SD	3.57	5.35		4.80	5.20	3.78	2.32		2.98	2.02	4.56	1.50

Enumeration of B cells by E. A. C. rosette technique: 5 ml of 1% SRBC mixed with 5 ml of 1/2000 diluted Amboceptor (Rabbit anti SRBC serum); incubated at 37^0 C for half an hour; and washed twice in RPMI medium. Then 5 ml of 1:30 dilution (sub hemolytic dose) of fresh human serum was added as a complement source, and incubated at 37^0 C till haemolysis starts. Then the cells were washed twice and 5ml of media was added. This is the EAC. To 0.2 ml of EAC, 0.2 ml of lymphocyte preparation (2×10^6 cells/ml) was added and centrifuged at low speed for 5 minutes; and incubated at 4^0 C over ice water bath for half an hour. The C'_3 coated sheep red cells (EAC) when mixed with lymphocytes formed rosettes around the B lymphocytes which bear receptors for the activated C'_3 component of complement . Then count was taken as in the case of T rosettes.

Delayed Hypersensitivity test using PPD: On intradermal injection of the antigen to which the person has had a previous contact, an indurate erythematous swelling develops at the site of injection reaching a peak at 48-72 hrs. One unit PPD (0.01ml) was given intradermally on the volar aspect of forearm. The reading was taken 72 hrs later. Erythema and indurations of 10 × 10 mm or more was considered positive.

Treatment schedule: In cancer patients drugs like Varandiquathem, Kanjanara gulgulu tablets, Rasa sinduram and Khadir arishtam have been administered orally in different combinations. For massage, Kottemchukkadi thailam and Pinda thailam were used and and in some cases treatment like navarakizhi have been given. For arthritis patients drugs like Maharasnadi quatham and Yogaraja gulgula tablets have been administered orally. Besides this, Sahacharadi thailam, Chinchadi thailam and Kottemchukkadi thailam have been prescribed for massage, and also treatment like Navarakizhi, patropodala Swedam and Kashayavasti were given.

RESULTS

10 normal healthy controls of both sexes have been studied. The mean T cell and B cell count was found to be 73 ± 3.57 and 28.93 ± 5.53 respectively. In rheumatoid arthritis patients, the percentage of T cell count was low at the start of treatment. After one month treatment, there was no considerable enhancement in their T cell count. B cell count however, remained the same (Table 1). In cancer patients also the T cell count was low at the start of treatment. Levels estimated after one month of treatment showed slight increase in T cell count. There was no change in the B cell count (Table 1). As the number of patients studied is small, significance could not be calculated. Since the results of the treatment in patients are encouraging, further studies before the treatment, one month and three months after treatment are in progress.

REFERENCES

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