

Salivary Immunoglobulins in Leprosy

TO THE EDITOR:

Leprosy has been known for its involvement of the oral and nasal mucosa. Recently considerable interest has been shown regarding the role of immunoglobulins in the external secretions which could be an important local agent of host defense.

In the present study, salivary immunoglobulins have been estimated in 50 patients with polar leprosy. An attempt has been

made to find out their relationship, if any, with the duration of disease and tobacco intake. The diagnosis in all the patients was confirmed by clinical examination and histopathological evaluation of skin biopsies. Those individuals who had any periodontal disease were excluded from the study. A history of tobacco consumption was recorded in all cases. As controls, ten healthy,

THE TABLE. *Salivary immunoglobulins in polar leprosy.*

Groups	Number of cases	Immunoglobulins in mg percent (mean \pm S.D.)		
		IgG	IgA	IgM
Control	10	15.26 \pm 1.43	13.63 \pm 2.83	Nil
Tuberculoid leprosy	25	4.61 \pm 2.32	8.63 \pm 1.63	Nil
Lepromatous leprosy	25	4.22 \pm 2.18	8.65 \pm 2.44	Nil

age-matched male individuals from the same socioeconomic strata were also studied.

After a mouth wash, saliva was collected from the floor of the mouth using a clean, sterilized pipette. Immediately after the collection of saliva, a trypsin activity inhibitor (Trasyol[®]-Bayers, West Germany) in a concentration of 500 K.I. units per ml was added. The saliva was concentrated in a dialysing bag surrounded by crystalline sucrose at 4°C. The concentrated fluid was used for qualitative detection of various immunoglobulins (IgG, IgA, and IgM) by immunodiffusion and counter-immuno-electrophoresis. Those samples which showed precipitation lines by these techniques were further subjected to quantitative assay by a radial immunodiffusion method using low standards (1). Colostral IgA was used as a standard for the measurement of salivary IgA. The immunoglobulin concentration of the test samples was read from the standard curve and appropriately computed to account for the concentration factor.

Qualitative detection and quantitative estimation of secretory IgA, IgG, and IgM in salivary secretions revealed that none of the samples from either the control or the leprosy subjects were positive for IgM. McClelland, *et al.* (2) have demonstrated IgM in salivary secretions in a concentration of 2.55 \pm 0.51 mg percent. In the leprosy patients, secretory IgA and IgG were found to be significantly decreased in comparison to the control subjects ($p < 0.05$), although no significant differences in these immunoglobulins were observed between the two polar types of leprosy (The Table). The duration of the disease also did not significantly affect the levels of secretory immunoglobulins in saliva. Saha and Chakraborty (3) also reported decreased levels of secretory immunoglobulins in lepromatous leprosy.

Scrimshaw, *et al.* (4) have reported high levels of secretory IgA in malnutrition which they thought to be due to proliferation of local lymphoid tissue in response to associated infections from which these individuals often suffered. Leprosy patients are frequently chronically malnourished and therefore one would expect an increase in secretory IgA instead of decreased levels. This suggests some additional factor or factors in leprosy which are responsible for decreased secretory IgA and IgG. Since leprosy bacilli do involve the oral mucosa, the decreased levels of secretory immunoglobulins might be due to involvement of salivary and mucus glands leading to pathological alterations, or these decreased levels could be due to atrophy of the local lymphoid tissues.

Tobacco with lime (Surti) is a known carcinogenic agent which not only destroys the mucosa but also alters the physiological activities of the mucosal epithelium. It has been found in the present study that the secretory immunoglobulins are not affected by tobacco intake in either the control or the leprosy subjects. Variable results were observed in individuals who consumed moderate to heavy amounts of tobacco. The changes in secretory immunoglobulins in leprosy seem therefore to be due primarily to the disease process and not related to tobacco intake.

—S. C. Gupta, M.D., F.R.C.P.

—B. Chhabra

—T. N. Mehrotra, M.D., Ph.D.

—A. K. Bajaj, M.D.

—S. N. Sinha, Ph.D., D.Sc.

*Department of Pathology
M.L.N. Medical College
Allahabad (U.P.)
India*

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