

LICHEN PLANUS AND GLUCOSE TOLERANCE

R. K. JAIN * P. DATTA † AND RATAN SINGH ‡

Summary

Twenty patients with lichen planus and 5 healthy controls were investigated for their glucose tolerance using steroid-primed glucose tolerance test. 60% of patients showed abnormal glucose tolerance as compared to none in control. Glucose intolerance was found to be more commonly associated with recent onset of disease but no relationship with the extent of involvement was observed.

Although lichen planus (LP) is a well recognized inflammatory mucocutaneous disease, its aetiology is virtually unknown. Of late several workers^{1,6} have observed abnormal glucose tolerance in 13% to 85% cases of lichen planus. This wide range in the results could possibly be due to different criteria used in the selection of cases. In many studies, cases over 50 years of age, with frank diabetes or with a family history of diabetes mellitus were included. The role of age and heredity in the causation of diabetes is well accepted and glucose tolerance is known to decrease with advancing age⁷. To overcome the influence of these factors, the present study was undertaken to evaluate more critically the precise relationship

between patients with LP and their glucose tolerance by applying rigid criteria in selection of cases and studying steroid-primed glucose tolerance test (SPGTT) in them.

Material and methods

20 cases of histologically proved lichen planus and 5 healthy controls comparable with regard to age, sex and body weight were selected from the skin OPD of LNJP hospitals, New Delhi. Patients with established diabetes mellitus as well as those patients with family history of diabetes mellitus were excluded from the study. Patients with asymptomatic diabetes determined by fasting and post prandial blood sugar levels were also dropped from the study. Those on diabetogenic drugs or suffering from any complicating medical illness likely to affect glucose tolerance like pyogenic infections, liver disease, chronic alcoholism, endocrinal diseases etc., were not included in the study.

All patients, after admission, were subjected to SPGTT following an overnight fast. Steroid priming was achieved by giving two doses of 10 mg prednisolone each 8½ hours and 2 hours

* Ex-Resident, Department of Dermatology & Venereology

† Assistant Professor, Department of Biochemistry

‡ Ex-Professor & Head, Department of Dermatology & Venereology, Maulana Azad Medical College, Associated L.N.J.P.N. & G.B. Pant Hospitals, New Delhi-110002

Request for Reprints:

B-5/15, Model Town, Delhi-110009.

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prior to taking fasting blood sample. 100 g. of glucose was then given orally to each patient and the venous blood samples withdrawn at 1, 1½, 2 and 3 hourly intervals. Blood sugar was estimated by method of Asatoor and King⁸. The criteria for a positive (abnormal) test were same as stipulated by Fajan and Conn⁹.

Observations

The ages of patients (twelve males and eight females) ranged from 12 to 45 years, the mean age being 28.1 years in study group and 28.4 years in the control group. The duration of LP lesions and extent of involvement is shown in Tables I and II respectively.

TABLE 1

Correlation between duration of disease and glucose tolerance

Duration of lesions (in years)	No. of cases	No. of cases with abnormal results
Less than 1	17	11
1 — 2	2	—
3 — 4	1	1

TABLE 2

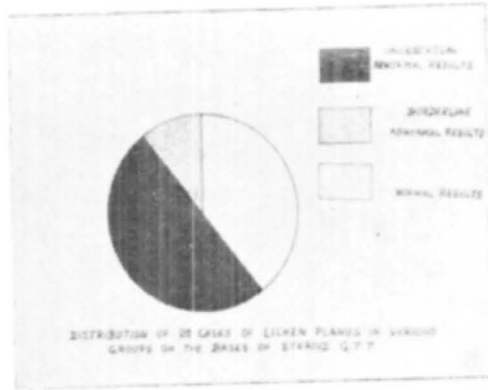
Correlation between extent of involvement and glucose intolerance

Grade	*Surface area involved	No. of cases	Cases with glucose intolerance
I	Less than 25%	4	1
II	25% to 50%	11	7
III	50% to 75%	2	2
IV	75% to 100%	3	2

* Calculated by the 'rule of nines'

Out of twenty patients with LP, ten (50%) showed unequivocal biochemical evidence of glucose intolerance while two (10%) showed single 1½ hour blood sugar values exceeding the upper limit of normal by 13mg% and 16mg%. These two patients, however, refused permission for a repeat test and were

considered to be having a borderline abnormality. All the control cases showed normal response to the test. Thus 60% of patients with LP showed some abnormality in glucose tolerance as compared to none in controls (Fig. 1).



The majority (91%) of patients with abnormal results had lesions of less than 1 year duration (Table I). Thus patients with recent onset of disease were found to be more commonly associated with glucose intolerance as compared to those with chronic lesions.

Cases with abnormal glucose tolerance had various extent of body involvement (Table II). No clear relationship between the extent of involvement and glucose intolerance was found.

Discussion

Many workers have reported high prevalence of glucose intolerance in the range of 62%, 42% and 85%^{3,4,6}. Others^{1,2} have found such prevalence in only 13% to 14% of cases.

Jolly⁶ in a study of 33 patients with oral lichen planus found 8 % patients to be having decreased glucose tolerance by the glucose tolerance test with 50 gm of oral glucose. The higher results obtained by Jolly as compared to 60% in the present study could be due to the fact that most of the patients in that study were in the

older age group; 71% of them being over 49 years of age. Further, 7 patients (21%) had family history of diabetes mellitus and 3 patients (9%) were known diabetics. Verma et al⁶ in another study with oral G.T.T., of 25 patients with lichen planus without personal or family history of diabetes mellitus found abnormal glucose tolerance in 56% cases. The blood sugar was estimated by autoanalyser method using ferricyanide reagent and criteria of abnormality were based on the earlier studies done in their institution (Rohtak). Majority (64%) of patients in their study also were in the age group of 41 to 60 years. Results in control cases are not available. The detection of glucose intolerance in 56% cases is comparable to 60% obtained in the present study, but their results probably would have shown lower values if patients of higher age groups were excluded as done in the present study.

Most patients with recent onset of LP lesions were observed to have associated glucose intolerance as compared to those with chronic lesions as has also been observed in other studies^{4,5} though Christensen et al² found no such relationship. No clear association between the extent of involvement and glucose intolerance was observed in our study as also in an earlier series reported by Verma et al⁶.

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