

Salivary Gland Function in Idiopathic Parkinson's Disease

Suk-Shin Cho, M.D., Hee-Tae Kim, M.D., Seung-Hyun Kim, M.D.,
Ju-Han Kim, M.D., Myung-Ho Kim, M.D.

Department of Nuclear Medicine* and Neurology,
College of Medicine, Hanyang University

Background; Parkinsonian patients often present the various types of dysautonomic symptoms and signs such as sialorrhea, seborrhea, excessive sweating, constipation, postural hypotension, etc. According to report (Bateson, 1973), sialorrhea or drooling was not due to excessive salivation but was probably due to defective swallowing and basal salivary flow in patients with Parkinson's disease was lower than that of age-matched controls. Some patients with Parkinson's disease complained of a dry mouth.

Object; To find out whether or not the salivary symptom was associated with salivary function and to determine relationship between salivary function and severity of Parkinson's disease.

Subjects and Methods; Twelve idiopathic Parkinson's disease (6 men and 6 women, aged 52 to 78 years) and ten age-matched controls (4 men and 6 women, aged 50 to 70 years) were studied. Ten patients with Parkinson's disease stopped antiparkinsonian medication at least for 7 days. Two patients have had no previous antiparkinsonian medication. Ten age-matched controls had no complaint of salivation and no medical diseases inducing autonomic dysfunction. In all patients and age-matched controls salivary gland function was estimated by sequential salivary scintigraphy according to the technique of Daniels (1979). Each patients received 7mCi of Tc 99m sodium pertechnetate intravenously. Sequential salivary scintigraphy was taken for 50 minutes. Salivary function was evaluated by sequential salivary scintigraphy (SSS) score. Adding the grades (0=normal, 1=delayed pertechnetate accumulation, and 2=marked delayed pertechnetate accumulation) each of five factors (time at which the label appeared in 1, parotid glands 2, submandibular glands and 3, oral region; concentration of label in 4, parotid glands and 5, submandibular glands) gave a score for each case (maximum score=10, minimum score=0).

Results; In the patients with Parkinson's disease, mean SSS score was 2.5, range from 0 to 7 and in age-matched controls, mean SSS score was 0.4, range from 0 to 2. The mean SSS score decreased significantly in patients with Parkinson's disease compared to the age-matched controls ($p < 0.01$). The two patients with Parkinson's disease complained of a dry mouth showed lower score than that of the other patients, but statistically not significant. Also, there was no correlation of SSS score with severity of Parkinson's disease.

Conclusions; It was noted that the salivary function decreased in patients with Parkinson's disease compared to the age-matched controls. We presumed that the difference in salivary function was a manifestation of the autonomic dysfunctions in idiopathic Parkinson's disease.