

## Salivary function in patients with chronic renal failure undergoing hemodialysis

Meryem KAYA,\* Tevfik Fikret ÇERMİK,\* Funda ÜSTÜN,\* Saniye ŞEN\*\* and Şakir BERKARDA\*

*Departments of \*Nuclear Medicine and \*\*Nephrology, Trakya University Medical Faculty, Edirne, Turkey*

**Purpose:** The aim of this study was to evaluate the changes in salivary gland function in patients with chronic renal failure (CRF) undergoing hemodialysis. **Methods:** The group consisted of 23 patients with CRF (13 female, 10 male; mean age:  $40 \pm 13$  yr) and 14 healthy control subjects (mean age:  $40 \pm 13$  yr). All underwent dynamic salivary gland scintigraphy with gustatory stimulation. After intravenous administration of  $^{99m}\text{Tc}$  pertechnetate, first, perfusion images at 2 seconds per frame were acquired for 1 minute, then dynamic images at 1 minute per frame were acquired for 45 minutes. At 30 minutes after injection, 10 ml lemon juice was given for 15 minutes as a gustatory stimulus. We obtained time-activity curves derived from regions of interest centered over the four major salivary glands. The following functional indices were calculated for each gland: the time of maximum radioactivity ( $T_{\max}$ ) for the prestimulated period, the time of minimum radioactivity ( $T_{\min}$ ), as an indicator of velocity of secretion after stimulation, and the Lem E<sub>5</sub>% value as an indicator of the secretion function. **Results:** When the patients with CRF undergoing hemodialysis were compared to the controls, there were statistically significant differences in  $T_{\max}$ ,  $T_{\min}$  and Lem E<sub>5</sub>% values for bilateral parotid glands, and  $T_{\min}$  values for bilateral submandibular glands ( $p < 0.05$ ), there were no statistically significant differences in  $T_{\max}$  and Lem E<sub>5</sub>% values for bilateral submandibular glands. There were also significant differences in  $T_{\max}$  and Lem E<sub>5</sub>% values for bilateral parotid glands between mild oral problems and severe oral problems in patients with CRF (undergoing hemodialysis). **Conclusion:** In this study, prolonged  $T_{\max}$  and  $T_{\min}$  values, and decreased Lem E<sub>5</sub>% values for parotid glands and prolonged  $T_{\min}$  values for submandibular glands on salivary scintigraphy pointed out decreased parenchymatous and excretory function in patients with CRF undergoing hemodialysis.

**Key words:** chronic renal failure, salivary function, scintigraphy