PHYSIOLOGICAL PARAMETERS CHANGES OF THE SALIVA IN PATIENTS WITH END STAGE RENAL FAILURE

A Thesis

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Abstract

Background: Many oral diseases were recorded in ESRD patients including as gingivitis, tooth mobility, xerostomia, ammonia-like smell, mucosal pallor and lesions, malocclusion and an increased risk of dental erosion. Salivary changes among ESRD patients might be attributed to renal failure, use of multiple medications, vomiting, depressive mood and low oral health hygiene.

Aims of study: assess the salivary changes of patients with end stage renal disease To determine whether there is changes in salivary compositions and biochemical parameters (urea, salivary PH) of patients with end stage renal failure.To find whether there is change in salivary trace element (zinc, copper).To identify whether there is change in salivary electrolyte (sodium, potassium, calcium) .Determine whether there is a change in salivary enzyme (amylase).

Subjects, Materials and Methods: A cross sectional study carried out in two dialysis centers in Baghdad (Al-Khadhimya Teaching Hospital and Al-Karamah Teaching Hospital) through a period from 1st of March to end of 30th of July, 2015 on convenient sample of 64 patients with end stage renal diseases and on 64 healthy controls. Salivary samples were collected by the researcher at the end of dialysis. Saliva was collected using the standard way of collection. The samples controlled to avoid drooling or swallowing. Whole saliva was collected under resting conditions in a quiet room. Duration was at least 1 h after dialysis. Each patient was asked to chew a piece of Arabic gum (0.5-0.7 gm) for one minute, all saliva was removed expectoration, chewing was continued for five minutes with the same piece of gum and saliva was collected in

sterile screw capped bottle. Salivary urea and Amylase were analyzed by specific kits, while slivary PH was tested by a hand-held pH meter. Salivary trace elements of saliva were analyzed at the Poisoning Consultation Center/Specialized Surgeries hospital by flame atomic absorption following standardized procedure.

Results: Mean age of ESRD patients was 50.1 ± 14.9 years, males were more than females. No significant difference was observed between patients and controls regarding age and gender.There was a highly significant difference in salivary Potassium, Sodium, Calcium, Copper, Urea and Amylase levels between ESRD patients and controls ($p<0.005$). There was a significant difference in salivary Zinc level between ESRD patients and controls ($p=0.02$). There was a significant association between increased age of ESRD patients and HT ($p=0.04$). A significant association was observed between HT among ESRD patients and high salivary Zinc level ($p=0.008$).

Conclusion: Abnormal high Salivary Urea concentration in ESRD patients are associated with or was high and it was a significant predictor of ESRD. This study showed that salivary minerals (Potassium, Sodium, Calcium and Copper) were more likely to be reduced in ESRD patients undergone hemodialysis.