

Effect of Mobile Phone Use on Total Antioxidant Capacity of Unstimulated Saliva from Fixed Orthodontic Appliances

Fatereh Samadi

Clinical Lecture, DHAL research Institute, Tehran , Iran

Extended Abstract

**Abstract**

**Background:** Saliva has many functions in the oral cavity and is the first line defense against dental caries. Oxidative stress can affect initiation and progression of many inflammatory and infectious diseases such as dental caries. Thus the aim of this study was to evaluate the relationship between total antioxidant capacity (TAC) of saliva and using cellular phones on from fixed orthodontic patients.

**Methods:** Healthy patients of fifty with fixed orthodontic appliances were asked not to utilize their phones for seven days, and their salivation tests were taken toward the week's end (control gathering). The patients recorded their season of cell phone use during the following week and returned for a second salivation assortment (test gathering). Tests at the multiple times were taken somewhere in the range of 8:00 and 10:00 pm, and the all out cancer prevention agent limit (TAC) were estimated. Two-followed combined examples t-test, direct relapse, free t-test, and 1-route investigation of fluctuation were utilized for information examination.

**Results:** The 2-tailed paired-samples t test showed significant differences between the levels of TAC in the control and experimental groups ( $t [49] = 10.321$ ;  $P < 0.001$ ). The linear regression test showed a significant relationship between mobile phone usage time and the total antioxidant capacity ( $P < 0.001$ ;  $R^2 = 0.432$ ).

**Conclusions:** With the limitation of this study, the results of current study revealed that mobile phone usage has a time-dependent influence on the total antioxidant capacity (TAC) in the saliva of patients with orthodontic appliances.

**Key Words:** *mobile phone, orthodontic, total antioxidant capacity*

**Background**

Mobile phones have presently become a vital piece of correspondence worldwide and have gotten intense changes our way of life by offering favorable circumstances of numerous applications and comfort. In the previous two decades, the cell phone memberships have developed exponentially with a worldwide infiltration of about 70% starting at 2011 information.

Orthodontic apparatuses are comprised of various composites and these machines are required to stay in the oral cavity of the patient for a delayed span. During treatment, these machines are presented to a few factors, for example, mechanical pressure, temperature and oral microflora. Shockingly, enzymatic and microbiological attributes of the oral pit make positive condition for metal consumption.

A few specialists, in both creature and human examinations have affirmed that mobile phone radiations cause huge increment in salivary oxidative pressure, salivary stream, complete protein and egg whites, while amylase movement was seen as diminished.

**Methods**

A sum of 49 solid patients, who were experiencing fixed orthodontic treatment were chosen for this cross-sectional examination. Test size was resolved utilizing G Power 3.0.10. Impact size of 0.891 was determined utilizing information from a comparative past examination by Saghiri MA et al.,. The blunder was fixed at 5% and  $\beta$  mistake at 20%. The intensity of study was 80%.

All the patients were in the age gathering of 12 to 25 years and had fixed orthodontic machines in their oral depression for a span running from six to nine months. They were partitioned into two gatherings of 24 each dependent on their versatile use.

**Group I** (Experimental Group) included twenty one patients experiencing fixed orthodontic treatment and who utilized cell phones for a base normal of 60 minutes/day.

**Group II** (Control Group) included twenty one patients experiencing fixed orthodontic treatment, whose cell phone use was near nil.

Patients with any sort of basic foundational infections and the individuals who were on long haul medicine influencing salivary natural chemistry, patients who smoked or devoured liquor, patients with any metallic reclamations in their oral pit, for example, amalgam or fixed prosthesis and the individuals who were reluctant to take an interest in the examination were avoided.

The patients were told not to drink hot tea or espresso for three days before spit assortment arrangement. They were additionally asked not to utilize any fluoridated items, for example, toothpastes or mouth washes for three evenings before visit. Prior to the assortment of salivation from patients, they were asked not to eat and drink an hour prior to assortment.

## Results

Information were not isolated dependent on sex (n=44). Examination between results got from both the gatherings is demonstrated. The centralization of nickel particles in spit gathered from patients of Group I (Experimental gathering) was more and pH was diminished when contrasted with Group II (control gathering). This uncovers cell phone use during orthodontic treatment however non-huge causes arrival of more nickel particles in spit and diminishes cancer prevention agent of salivation.

## Discussion

Over the most recent two decades, logical examination has been focussed on the effect of electromagnetic radiation on living issue all in all. Every day fake radio recurrence fields are delivered by gadgets, for example, cell phones, microwaves, broilers, PCs, radio transmitters or radars.

Mobile phones are known to produce warm and discharge TAC as non-ionizing electromagnetic radiation in the scope of 800 to 2200 MHz, like many home machines.

The impacts of utilizing mobile phones on parotid organs have been concentrated by different specialists. Overwhelming clients of mobile phones showed expanded paces of salivary and blood stream and more noteworthy volumes of parotid organs.

Subsequently, it tends to be reasoned that, the more drawn out the presentation to TAC produced by a mobile phone, the more prominent the convergence of nickel in spit. This issue shows that mobile phone use can hurt the oral pit in a few different ways particularly in patients with fixed orthodontic apparatuses.

## Limitation

Utilization of mobile phones is across the board to the point that it is very hard to track down enough individuals who don't utilize them. Further, research by methods for huge scope

longitudinal investigations in this field is fundamental to make mindfulness in regards to destructive impacts of cell phone radiations among the populace around the world.

### **Conclusion**

With the constraint of this investigation, the consequences of current examination uncovered that mobile phone utilization impacts the all out cancer prevention agent limit (TAC) in the salivation of patients with orthodontic appliances.

Note: This work is Partly at 25th American Dental Research & Future Dentistry, June 14-15, 2019 Montreal, Canada