

Annual Conference on Bioscience

September 12-13, 2016 Berlin, Germany

Effect of non-thermal atmospheric plasma on surface morphology of radicular dentin: A pilot study

Basak Kusakci Seker and Emre Seker
Eskisehir Osmangazi University, Turkey

The purpose of this study was to assess the effect of non-thermal atmospheric plasma-jet on the surface morphology of radicular dentin. Four extracted single-root human teeth were cut 1 mm below the cement-enamel junction in order to obtain samples. The labial sides of the samples were polished and rinsed under deionized water. The plasma stream had a length of 11 mm. The distance between nozzle and dentin was approximately 5 mm. Argon gas is used as carrier gas at a flow of 5 l/min at 2.5 Bar. Roughly 1 cm² of dentin surface was treated for 30 second, 60 second and 120 second with plasma jet. For SEM observations, the samples were fixed in 2.5% gluteraldehyde in phosphate buffer (pH 7.3) for 24 hours at 4 °C and washed 3 times for 10 minutes each in phosphate buffer. The specimens were then dehydrated in a series of aqueous ethanol solutions with ascending strengths up to 100%. They were dried overnight in a desiccator jar and mounted with silver paint on SEM stubs. Significant differences were detected before and after plasma treatment. According to results of this study, it can be assumed that non-thermal atmospheric plasma can significantly alter the morphology of radicular dentin, which is an important characteristic to be considered when plasma is used for clinical applications.

Biography

Basak Kusakci Seker has completed her undergraduate education and PhD from Hacettepe University and Near East University respectively. She is a Lecturer and Clinical Specialist at Eskisehir Osmangazi University, Faculty of Dentistry, Department of Periodontology. She has published more than 20 papers and presentations and continues to study on dental implant surgery, dental laser applications, plasma disinfection, wound healing and bone regeneration techniques.

basakusakci@hotmail.com

Notes: