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Immediate Denture wearers in type 2 Diabetes Mellitus: Salivary VEGF and Post-Extraction Wound Healing

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Oral wounds healing in healthy could be promoted by VEGF in saliva, and immediate denture wearing, but data in type 2 diabetes are lacking. Aims were to investigate time-line of extraction wound healing in diabetic participants wearing immediate dentures and its correlation to salivary VEGF, as well as to examine the impact of palatal plate on tissue VEGF during palatal wound healing in rat diabetic model.

Material and methods: Healthy and type 2 diabetic denture wearers, candidates for teeth extractions were included. Extraction wound healing was followed via measurements of socket closure, gingival hyperaemia, pain and presence of necrosis on 3rd, 7th, 14th and on 21st day post extraction. Salivary VEGF was measured before and on the 3rd and 21st day after extraction. In streptozotocin-induced diabetic as well as non-diabetic rats, tissue VEGF was measured in palatal wounds healing under or without palatal plate.

Results: Type 2 diabetic prosthetic patients exhibit delayed socket closure, with pronounced hyperemia, pain and necrosis. Salivary VEGF is increased in diabetes and positively correlates to socket closure while negatively with pain at 21st day after extraction. Palatal incision induced VEGF increase in non-diabetic and diabetic, but less pronounced in diabetic rats. Wound healing under palatal plate exhibit higher tissue VEGF.

Conclusion: Type 2 diabetes-induced increase in salivary VEGF may mitigate diabetes-induced detrimental effects on extraction wound healing. Lack of adequate tissue VEGF response to injury may underly dysregulation of diabetic oral wound healing.

Keywords: immediate denture; wound healing; diabetes mellitus type 2; VEGF

Biography

Dr. Jovanovic Boris is second year of PhD studies and resident on Department of Prosthetic, University of Belgrade. He won the award for the best graduate student of dentistry in 2016. He has published more than 10 papers in Dental International Congress.

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