

Oxidative Stress and Chronic Apical Periodontitis: an Assessment of the Levels of Oxidative Stress Before and After Endodontic Treatment in 103 Patients with Chronic Apical Periodontitis

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AIM: The aim of the present study is to assess the correlation between chronic apical periodontitis and oxidative stress. In fact, chronic apical periodontitis is reactive oral disease and it may cause an imbalance between production and elimination of Reactive Chemical Species (RCS), with a greater risk for onset of parapsychological and pathological conditions, such as cardiovascular diseases.

MATERIALS AND METHODS: A randomized group of 103 patients between 30 and 68 years of age, presenting with chronic apical periodontitis, was recruited. We assessed the oxidative balance by measuring the oxidant status by d-ROMs Test and the antioxidant status by BAP Test, before endodontic treatment and 30 and 60 days after. Patients were excluded from this study if there was no healing of chronic periodontitis.

RESULTS: On recruitment, patients affected by chronic apical periodontitis presented with higher d-ROMs Test values than the average values of healthy subjects. These values decreased by $28 \pm 9\%$ 30 days after endodontic treatment and by $35 \pm 10\%$ at 60 days.

DISCUSSION AND CONCLUSIONS: We observed a positive association between oxidative stress and chronic apical periodontitis. We can conclude that the presence of chronic apical periodontitis increases the risk of diseases related to an altered oxidative balance, due to the higher levels of oxidative stress. The present study also revealed that after treatment of chronic apical periodontitis, the levels of oxidative stress tend to reduce and return to normal after 60 days. The treatment of these lesions of endodontic origin brings the levels of oxidative stress back to normal, and reduces the risk for onset of diseases related to a condition of oxidative stress.

REFERENCES

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PATHOLOGICAL CONDITIONS ASSOCIATED TO OXIDATIVE STRESS

SENESCENCE

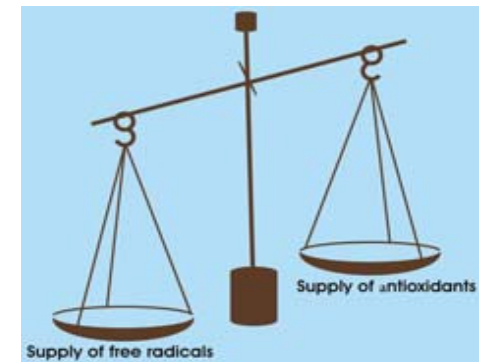
DIABETES MELLITUS TYPE 2

CARDIOVASCULAR DISEASES (Ischemic reperfusion injury)

CANCER

PULMONARY DISEASES (pulmonary emphysema, interstitial fibrosis)

LIVER DISEASES



	BAP Test (mmol/L)					d-ROMs Test (U CARR)				
	T0	T2	T3	% variation T0-T2	% variation T0-T3	T0	T2	T3	% variation T0-T2	% variation T0-T3
<i>mean</i>	1880	2147	2365	14	26	429	311	274	28	36
<i>sd</i>	154	165	110	5	6	65	30	14	9	10
<i>median</i>	1892	2145	2376			435	318	274		
<i>min</i>	1498	1549	2178			276	249	241		
<i>max</i>	2240	2489	2633			561	389	299		

Groups	F	F crit	p
BAP test t0 t2	144,0542	3,88745	<0,001
BAP test t0 t3	679,6816	3,88745	<0,001
d-ROMs test t0 t2	275,2317	3,88745	<0,001
d-ROMs test t0 t3	555,9293	3,88745	<0,001