

# **Pulpal Changes of Permanent Teeth in Diabetic Patients**

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**Dedication to**

Souls of my dearest Mother and Father

My beloved Husband

My dear Sisters

# **Pulpal changes of permanent teeth in diabetic patients**

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## **Abstract**

**PURPOSE:** To evaluate the effect of diabetes mellitus on dental pulp of permanent teeth, by recording the histopathological changes occurred in these teeth.

**MATERIALS AND METHODS:** Sixty five recently extracted teeth, Forty five teeth extracted from patients having diabetes for at least (8-10) years (group A). Control group has 20 teeth extracted from healthy patients (group B). No gender, occupational, social or residential predilection. All patients signed a consent sheet. Patients selected were of age ranging between (20-40) years old (mean age 30 years). Decalcification of extracted teeth was done and stained using a Hematoxylin and Eosin stain. A blood samples were taken from patients to be tested for Glycated hemoglobin HbA1c, Ionized Calcium level, Serum alkaline phosphatase ALP, Fasting blood sugar and complete blood picture. Histopathological examination of pulp chamber and root canals was done by light microscope to determine pulpal changes. Statistical analysis of numerical data was done.

**RESULTS:** All specimens of control group are showing normal pulp. Group A has inflammation, fibrosis, calcification and stones, partial necrosis and angiopathy. Group A showed statistically significant higher mean fasting blood glucose, HbA1c and WBC than group B. There was no statistically significant correlation between stone areas and age or diabetes duration. Females showed statistically significantly higher mean stone areas than males  $P \leq 0.05$ . There was a statistically significant positive (direct) correlation between stone areas and HbA1c. There was a statistically significant negative (inverse) correlation between stone areas and HGB. There was no statistically significant correlation between stone areas and other laboratory investigations.

**CONCLUSION:** Diabetes mellitus seems to be a causative factor of many histopathological pulpal changes that increase liability and need of teeth for endodontic treatment as well as increase the difficulties faced by the endodontist during the procedures of the treatment.

**KEYWORDS:** Diabetes mellitus, histopathological changes, pulp stones, calcification, HbA1c.

## *List of contents*

<b>Subject</b>	<b>Page</b>
<b>Introduction</b>	<b>1</b>
<b>Review of literature</b>	<b>3</b>
• Diabetes mellitus; an overview	<b>4</b>
• Histological changes in normal pulp	<b>8</b>
• Histological changes of periodontium and teeth in diabetic patients	<b>11</b>
<b>Aim of study</b>	<b>33</b>
<b>Materials and methods</b>	<b>34</b>
<b>Results</b>	<b>40</b>
• Histopathological evaluation	<b>41</b>
• Statistical analysis	<b>54</b>
<b>Discussion</b>	<b>67</b>
<b>Summary and conclusion</b>	<b>76</b>
<b>Recommendations</b>	<b>78</b>
<b>References</b>	<b>79</b>
<b>Appendix</b>	
<b>Arabic summary</b>	

## *List of figures*

<b>Figure</b>	<b>Page</b>
(1) Copy of display seen on the monitor of the image analyzer demonstrating how surface area of stone was done by manual tracing the outline of each stone	<b>38</b>
(2) Photomicrograph of a case in control group showing normal pulp tissue (H&E $\times$ 200)	<b>41</b>
(3) Photomicrograph of a case in diabetic group showing increased inflammatory cells infiltration (I.C), dilated blood vessel (B.V) and fibrosis (F) (H&E $\times$ 100)	<b>43</b>
(4) Photomicrograph of a case in diabetic group showing inflammatory cells infiltration (I.C) and fibrosis (F) (H&E $\times$ 200)	<b>43</b>
(5) Photomicrograph of dental pulp of a case in diabetic group showing large detached pulpal stone with smaller two stones (arrows) (H&E $\times$ 40)	<b>44</b>

(6)	Photomicrograph of dental pulp of case in diabetic group showing; A: attached stone, B: detached stone (H&E $\times$ 40)	45
(7)	Photomicrograph of dental pulp in diabetic group showing small multiple detached stones (arrows) (H&E $\times$ 100)	45
(8)	Photomicrograph of pulpal tissue of specimen in diabetic group showing large attached stone (arrow) (H&E $\times$ 40)	46
(9)	Photomicrograph of pulpal tissue of specimen in diabetic group showing large stone (L) and smaller stone (arrow) located at canals orifices (H&E $\times$ 40)	46
(10)	Photomicrograph of pulpal tissue of specimen in diabetic group showing partial necrosis (arrows) (H&E $\times$ 100)	48
(11)	Photomicrograph of dental pulp of specimen in group A (diabetic group) showing partial necrosis (N) and vaculation (V) (H&E $\times$ 100)	48



<b>(12)</b>	Photomicrograph of pulpal tissue in diabetic group showing calcification in blood vessels (arrows) (H&E $\times$ 40)	<b>49</b>
<b>(13)</b>	Photomicrograph of dental pulp of case in diabetic group showing blood vessels dilatation (B.V) and focal areas of calcification (arrows) (H&E $\times$ 100)	<b>50</b>
<b>(14)</b>	Photomicrograph of dental pulp of case in diabetic group showing blood vessels dilatation (B.V) and inflammatory cells infiltration (I.C) of pulpal tissue (H&E $\times$ 100)	<b>50</b>
<b>(15)</b>	Photomicrograph of dental pulp of hypertensive case in diabetic group showing characteristic vaculation (white arrows) and diffuse calcification (blue arrows) (H&E $\times$ 40)	<b>52</b>
<b>(16)</b>	Photomicrograph of dental pulp of case in diabetic group having hypertension showing characteristic vaculation (V) and diffuse calcification (D.C) with higher magnification (H&E $\times$ 100)	<b>53</b>

## *List of tables*

<b>Table</b>		<b>Page</b>
<b>(1)</b>	Different devices and techniques used to test blood samples	<b>36</b>
<b>(2)</b>	Comparative percent of different degree of inflammation and fibrosis in histologic sections of control and diabetic groups	<b>42</b>
<b>(3)</b>	Comparative percent of diffuse, complete calcification and stone existence in histologic sections of control and diabetic groups	<b>44</b>
<b>(4)</b>	Comparative percent of necrosis in histologic sections of control and diabetic groups	<b>47</b>
<b>(5)</b>	Histopathological findings in diabetic patients having hypertension	<b>51</b>
<b>(6)</b>	Descriptive statistics, results of Student's t-test and chi-square test for comparisons between	<b>54</b>

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demographic data in the two groups

**(7)** Descriptive statistics and results of chi-square test for comparisons between medical history and habits in the two groups **55**

**(8)** Descriptive statistics and results of Student's t-test or Mann-Whitney U test for comparisons between laboratory investigations in the two groups **57**

**(9)** Results of Spearman's correlation coefficient for the correlation between stone area and age **61**

**(10)** Descriptive statistics and results of Mann-Whitney U test for the comparison between stone areas in females and males **62**

**(11)** Results of Spearman's correlation coefficient for the correlation between stone area and diabetes duration **63**

**(12)** Descriptive statistics and results of Mann-Whitney U test for the comparison between stone areas in hypertensive and none Hypertensive **63**

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subjects

**(13)** Descriptive statistics and results of Mann-Whitney U test for the comparison between stone areas in smokers and non-smokers **63**

**(14)** Descriptive statistics and results of Mann-Whitney U test for the comparison between stone areas in subjects with and without bruxism **63**

**(15)** Results of Spearman's correlation coefficient for the correlation between stone area and different laboratory investigations **66**

### *List of graphs*

<b>Graph</b>	<b>Page</b>
(1) Showing a comparison between diabetic and control group in percent of necrosis found in histological sections	<b>47</b>
(2) Showing a comparison between histopathological findings in hypertensive cases in diabetic group	<b>51</b>
(3) Bar chart representing gender distributions in the two groups	<b>54</b>
(4) Bar chart representing prevalence of hypertension in the two groups	<b>55</b>
(5) Bar chart representing prevalence of smoking in the two groups	<b>56</b>
(6) Bar chart representing prevalence of Bruxism in the two groups	<b>56</b>

<b>(7)</b>	Bar chart representing mean ionized Calcium levels in the two groups	<b>58</b>
<b>(8)</b>	Bar chart representing mean ALP levels in the two groups	<b>58</b>
<b>(9)</b>	Bar chart representing mean RBC in the two groups	<b>58</b>
<b>(10)</b>	Bar chart representing mean PLT in the two groups	<b>59</b>
<b>(11)</b>	Bar chart representing mean PTT in the two groups	<b>59</b>
<b>(12)</b>	Bar chart representing mean INR in the two groups	<b>59</b>
<b>(13)</b>	Bar chart representing mean HGB levels in the two groups	<b>60</b>
<b>(14)</b>	Bar chart representing mean fasting blood glucose levels in the two groups	<b>60</b>

<b>(15)</b>	Bar chart representing mean HbA1c levels in the two groups	<b>60</b>
<b>(16)</b>	Bar chart representing mean WBC in the two groups	<b>61</b>
<b>(17)</b>	Bar chart representing mean stone areas in females and males	<b>62</b>
<b>(18)</b>	Bar chart representing mean stone areas in smokers and non-smokers	<b>64</b>
<b>(19)</b>	Scatter diagram representing positive correlation between stone areas and HbA1c	<b>64</b>
<b>(20)</b>	Scatter diagram representing negative correlation between stone areas and HGB	<b>65</b>

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