



# Periodontal condition of cirrhotic liver transplant candidates and health controls

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## Objective

The objective of this investigation was to compare the periodontal condition of liver transplant candidates (LTCs) with healthy controls.

## Methods

A complete periodontal examination was performed on fifty liver transplant candidates (LTC group) and fifty patients without liver disease (control group). Demographic data, systemic health and information related to liver disease were collected using a structured questionnaire. Full-mouth complete periodontal examination of six sites per tooth was performed: gingival recession (GR), probing depth (PD), attachment loss (AL), bleeding on probing (BOP), and visible plaque index (VPI). The groups were compared in regard to periodontal clinical variables.

## Results

**Table 1. Comparison of liver transplant candidates and controls in regard to social and behavior variables**

Variable	Controls (N=50)	LTC (N=50)	p-value
Mean (SD) age in years	51.6 (9.3)	52.3 (9.6)	0.3
Number (%) of males	41 (82)	41 (82)	
Mean (SD) years of formal schooling	10.5 (5.2)	9.5 (4.2)	0.19
Mean (SD) monthly income in US dollars	533.1 (509.1)	501.8 (497.8)	0.45
Number (%) of current alcohol consumers	13 (26)	5 (10)	0.09
Number (%) of former alcohol consumers	3 (6)	16 (32)	0.002*
Number (%) of current smokers	8 (16)	8 (16)	1.00
Number (%) of former smokers	13 (26)	10 (20)	0.27
Mean (SD) duration of smoking in years	30.9 (13.7)	30.4 (12.9)	0.47
Mean (SD) number of cigarettes per day	13.3 (9.6)	11.1 (6.1)	0.26

\*Significant at  $\alpha=5\%$

**Table 2. Comparison of liver transplant candidates and controls in regard to periodontal clinical variables**

Variable	Controls (N=50)	LTC (N=50)	p-value
Mean (SD) number of missing teeth	6.7 (5.1)	9.06 (6.3)	0.02*
Mean (SD) percentage of sites with VPI	68.7 (20.4)	71.5 (26.6)	0.28
Mean (SD) number of sites with PD $\geq$ 4mm	16.7 (20.2)	28.8 (23.4)	0.47
Mean (SD) percentage of sites with PD $\geq$ 4mm	15.9 (17.3)	23.2 (20.7)	0.29
Mean (SD) number of sites with PD $\geq$ 6mm	3.8 (5.1)	5.7 (6.5)	0.41
Mean (SD) percentage of sites with PD $\geq$ 6mm	3.6 (5.1)	4.5 (6.4)	0.49
Mean (SD) PD	2.6 (0.6)	2.7 (0.7)	0.17
Mean (SD) number of sites with CAL $\geq$ 3mm	79 (26.52)	83.2 (35.2)	0.25
Mean (SD) percentage of sites with CAL $\geq$ 3mm	63.5 (19.5)	74.8 (23.9)	0.005*
Mean (SD) number of sites with CAL $\geq$ 5mm	24.6 (23.6)	37.3 (29.4)	0.009*
Mean (SD) percentage of sites with CAL $\geq$ 5mm	21.7 (24.4)	35.2 (25.4)	0.004*
Mean (SD) CAL	3.4 (1.1)	4.2 (1.3)	< 0.001*
Mean (SD) GR	0.8 (0.9)	1.4 (0.8)	< 0.001*
Mean (SD) BOP%	33.4 (22.9)	33.9 (22.4)	0.45
Prevalence of periodontitis <sup>†</sup> n(%)	09 (18)	28 (56)	< 0.001*

LTC, liver transplant candidates; N, number; VPI, visible plaque index; CAL, clinical attachment level; PD, probing depth; BOP, bleeding on probing; SD, standard deviation; GR, gingival recession; \*Significant at  $\alpha=5\%$ ; <sup>†</sup> according to Tonetti & Claffey (2005).

## Conclusion

Liver transplant candidates exhibited increased prevalence, extent, and severity of periodontitis when compared with control patients.