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ERRATUM

Erratum to: Is smoking a predictor of apical periodontitis?

Fabiola-Regina Rodriguez · Babür Taner · Roland Weiger · Clemens Walter

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Unfortunately, while analysing the data from our patient sample for follow up projects by the statisticians a misclassification of patients with respect to smoking status was recognized. The number of patients within the smoking groups, i.e. current, former, never smokers, changed, leading to alterations within the descriptive (Tables 1 and 2) and the analytical statistics (Tables 3 and 4). The significances of the data remained unchanged as well as the conclusion "Smoking status did not predict apical periodontitis in females and males in this sample group." which is supported by the re-calculated data. The authors apologize for any inconvenience the reader and the publisher may have had with this manuscript.

The passages with the altered numbers appear below:

In the "Abstract": This cohort study included full-mouth periapical radiographs of 161 subjects, including 66 current smokers, 28 former smokers and 67 individuals who had never smoked. Current male cigarette smokers with <10 or ≥10 pack years showed frequencies of apical periodontitis of 7.9 % and 7.5 %, respectively, compared to 4.1 % in individuals who had never smoked. The corresponding data for female smokers were 5.8 % and 7.4 % in smokers with <10 or ≥10 pack years, respectively, versus 5.2 % in individuals who had never smoked.

In the "Materials and Methods" section: Full-mouth periapical radiographs from 161 patients with a total of 4012 teeth (3988 after exclusion of third molars) were analysed independently by two examiners (FR, BT). After the calibration procedure, 3988 teeth from 161 patients were scored according to the aforementioned criteria. All analyses were performed with the statistical package R (The R Foundation for Statistical Computing Version 2.15.1).

In the "Results" section: Among female current smokers with <10 and ≥10 pack year histories, the mean numbers of teeth per subject were 25.1 and 24.3, respectively, compared to 24.7 in females who had never smoked. Males displayed a trend of higher mean numbers of teeth in each smoking category compared to females, with male current smokers with <10 pack year histories having 26.5 teeth, current smokers with ≥10 pack year histories having 24.5 teeth and those who had never smoked having 24.9 teeth. Overall, 3988 teeth were analysed according to the PAI criteria. After the exclusion of former smokers, 1748 teeth in females and 1551 teeth in males were included and further analysed in the study (Table 2). Current cigarette smoking in females with <10 or ≥10 pack year histories was associated with a higher frequency of apical periodontitis (5.8 % and 7.4 %, respectively) than that found in never smokers (5.2 %). Current cigarette smoking with a <10 pack year history was associated with a pronounced frequency of apical periodontitis (7.9 %) in males. The corresponding frequencies for current smokers with ≥10 pack year histories and never smokers were 7.5 % and 4.1 %, respectively (Table 2).

Model 1: The presence of a coronal restoration was a predictor of apical periodontitis in female (OR 3.51, $p<0.001$) and male (OR 3.11, $p<0,001$) patients, when the absence of a coronal restoration was used as a reference (Table 3). In this cohort, the presence of a root canal filling was a strong predictor of apical periodontitis in females (OR 9.38, $p<0.001$) and males (OR 7.14, $p<0.001$) when compared to the absence of RCF. With respect to a prevalent

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F.-R. Rodriguez · B. Taner · R. Weiger · C. Walter
Department of Periodontology, Endodontology and Cariology, University of Basel, Basel, Switzerland

C. Walter
Department of Oral Surgery, School of Dentistry
University of Birmingham, Birmingham, UK

C. Walter (✉)
Department of Periodontology, Endodontology and Cariology, Dental School, University of Basel, Hebelstrasse 3, 4056 Basel, Switzerland
e-mail: clemens.walter@unibas.ch

Table 1 Demographic data and characteristics of the study population (PPD = Periodontal Probing Depth, PI = Plaque Index, BI = Bleeding Index, SD = standard deviation, y = years, py = pack years)

Characteristics	females	males	p-value
Smoking status, % (n)			0.24
Current	53.0 (35)	47.0 (31)	
<10 py	18.2 (12)	15.2 (10)	
≥10 py	34.8 (23)	31.8 (21)	
Former	32.1 (9)	67.9 (19)	
Never	53.7 (36)	46.3 (31)	

coronal restoration and a prevalent root canal filling, a differentiation according to pack years was performed and revealed, that a history of <10 pack years in male current smokers could significantly predict apical periodontitis (OR 2.75, p=0.048) when never smokers were used as the reference. In male current smokers with a tobacco use history ≥10 pack years (OR 1.98, p=0.087) and in female smokers with a history of either <10 (OR 1.44, p=0.43) or ≥10 pack years (OR 1.13, p=0.75), apical periodontitis could not be significantly predicted when never smokers were used as the reference. Model 2: Quality of root canal filling was a significant predictor of apical periodontitis in females (OR 4.35, p<0.001) but not in males (OR 1.92, p=0.18).

Table 2 Frequency of apical periodontitis according to the PAI score in females (a) and males (b) (numbers were rounded to one decimal place)

	n subjects	n teeth	n teeth/ subjects	n teeth missing	% teeth not judgeable	normal periapical conditions			apical periodontitis			
						% teeth with PAI 1	% teeth with PAI 2	% teeth with PAI 1, 2	% teeth with PAI 3	% teeth with PAI 4	% teeth with PAI 5	% teeth with PAI 3, 4, 5
a) Smoking status												
Never	36	889	24.7	123	1.2	83.4	10.2	93.6	2.9	0.7	1.6	5.2
Current	35	859	24.5	126	1.4	80.5	11.3	91.8	4.1	0.4	2.3	6.8
<10 Pack years	12	301	25.1	36	2.2	80.4	11.6	92.0	3.0	0.3	2.5	5.8
≥10 Pack years	23	558	24.3	90	1	80.6	11.2	91.8	4.7	0.5	2.2	7.4
b) Smoking status												
Never	31	771	24.9	101	2.2	85.7	8.3	94.0	1.6	0.3	2.2	4.1
Current	31	780	25.2	91	1.4	79.4	11.6	91.0	3.3	1.2	3.2	7.7
<10 Pack years	10	265	26.5	16	1.3	80.0	10.8	90.8	4.5	1.3	2.1	7.9
≥10 Pack years	21	515	24.5	75	1.5	79.1	12.0	91.1	2.6	1.1	3.8	7.5

Table 3 In a first step, all parameters were separately analysed by univariate models in order to select the significant parameters for inclusion in the multivariate model. To predict PAI 3, 4 or 5 versus PAI 1 or 2 generalised linear mixed-effects models using the logit link were performed for both subject-specific (e.g. age, race, smoking groups) and tooth-specific (i.e., prevalent coronal restoration and root canal filling) parameters. Odds ratios and 95 % CIs as well as the corresponding *p* values were estimated. To perform separate analyses for females and males, nested models were executed with subject-and tooth-specific covariates as fixed factors and subject as a random factor. All analyses were performed with the statistical package R (The R Foundation for Statistical Computing Version 2.15.1)

	females			males		
Predictor	OR	95 % CI	p-value	OR	95 % CI	p-value
Current smoker <10 py vs. never smoker	1.44	0.58–3.59	0.43	2.75	1.01–7.47	0.048
Current smoker ≥10 py vs. never smoker	1.13	0.54–2.37	0.75	1.98	0.91–4.34	0.087
Age ≥50 vs <50	1.07	0.55–2.09	0.83	1.21	0.62–2.34	0.58
RCF yes vs. no	9.38	6.78–12.97	<0.001	7.14	5.00–10.20	<0.001
Restoration yes vs. no	3.51	2.53–4.87	<0.001	3.11	2.28–4.25	<0.001

Table 4 To predict PAI 3, 4 or 5 versus PAI 1 or 2 generalised linear mixed-effects models using the logit link were performed for both subject-specific and tooth-specific (i.e., quality of root canal treatment) parameters. Odds ratios and 95 % CIs as well as the corresponding *p* values were estimated

	females			males		
Predictor	OR	95 % CI	p-value	OR	95 % CI	p-value
Current smoker <10 py vs. never smoker	1.42	0.31–6.47	0.65	2.00	0.37–10.71	0.42
Current smoker ≥10 py vs. never smoker	1.00	0.31–3.21	1.00	1.19	0.33–4.38	0.79
Age ≥50 vs <50	0.79	0.27–2.33	0.67	1.46	0.45–4.68	0.53
RCF unsatisfactory vs. satisfactory	4.35	1.89–10.00	<0.001	1.92	0.75–5.00	0.18