Check for updates

OPEN ACCESS

APPROVED BY Frontiers Editorial Office, Frontiers Media SA, Switzerland

*CORRESPONDENCE Stefania Cantore 🖂 stefaniacantore@pec.omceo.bari.it

RECEIVED 20 February 2025 ACCEPTED 25 February 2025 PUBLISHED 13 March 2025

CITATION

Dioguardi M, Bizzoca ME, Cantore S, Caloro GA, Musella G, Mastrangelo F, Lo Muzio L and Ballini A (2025) Corrigendum: Impact of cerebrovascular stroke on inflammatory periodontal indices: a systematic review with meta-analysis and trial sequential analysis of case-control studies. Front. Oral Health 6:1580261. doi: 10.3389/froh.2025.1580261

COPYRIGHT

© 2025 Dioguardi, Bizzoca, Cantore, Caloro, Musella, Mastrangelo, Lo Muzio and Ballini. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Corrigendum: Impact of cerebrovascular stroke on inflammatory periodontal indices: a systematic review with metaanalysis and trial sequential analysis of case-control studies

Mario Dioguardi¹, Maria Eleonora Bizzoca¹, Stefania Cantore^{2*}, Giorgia Apollonia Caloro³, Gennaro Musella¹, Filiberto Mastrangelo¹, Lorenzo Lo Muzio¹ and Andrea Ballini¹

¹Department of Clinical and Experimental Medicine, University of Foggia, Foggia, Italy, ²Department of Precision Medicine, University of Campania "Luigi Vanvitelli", Naples, Italy, ³Unità Operativa Nefrologia e Dialisi, Presidio Ospedaliero Scorrano, ASL (Azienda Sanitaria Locale) Lecce, Scorrano, Italy

KEYWORDS

stroke, periodontitis, brain, oral and dental health, bone loss, oral inflammation, risk factor, tooth loss

A corrigendum on

Impact of cerebrovascular stroke on inflammatory periodontal indices: a systematic review with meta-analysis and trial sequential analysis of case-control studies

By Dioguardi M, Bizzoca ME, Cantore S, Caloro GA, Musella G, Mastrangelo F, Lo Muzio L, Ballini A. Front Oral Health. (2024) 5:1473744. doi: 10.3389/froh.2024.1473744

Error in Figure/Table

In the published article, there was an error in figures 2-6 as published. In the forest plot images (figures 2–6) representing the results of the meta-analysis that have been published, the fixed effects have been applied unlike the Random effects as described in the captions and in the manuscript. The corrected (Figures 2–6) and its caption.

	5	Stroke		0	Control			Mean Difference		Mea	an Difference	e	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl		IV, R	andom, 95%	CI	
Abolfazli et al. 2011	2.98	1.97	100	2.48	2.11	50	15.6%	0.50 [-0.20, 1.20]					
Diouf et al. 2015	2	1.657	120	1	0.913	120	20.3%	1.00 [0.66, 1.34]					
Dörfer et al. 2004	4.3	1.33	303	3.87	1.18	300	21.6%	0.43 [0.23, 0.63]			-		
Ghizoni et al. 2012	5.1	4.4	20	3.2	2.6	60	4.8%	1.90 [-0.14, 3.94]			-	-	
Leira et al. 2016	6.2	2.1	62	3.8	1.2	60	16.9%	2.40 [1.80, 3.00]					
Pradeep et al. 2010	3.99	1.21	100	3.18	0.94	100	20.7%	0.81 [0.51, 1.11]					
Total (95% CI)			705			690	100.0%	1.04 [0.54, 1.54]			•		
Heterogeneity: Tau ² =	0.29; Ch	i ² = 42.3	30, df =	5 (P < 0	0.00001);	8%		-4		0	2	4
Test for overall effect:	Z = 4.05	(P < 0.0	001)						-	Favours (Str	okel Favour	s icontrol	ן ד

FIGURE 2

Forest plot of clinical attachment loss, mean difference: 1.04 95% CI [0.54, 1.54], Tau² = 0.29, Higgins heterogeneity index l^2 = 88, Chi² = 42.30, df (degrees of freedom) 5, *P* value < 0.00001, test for overall effect: *Z* = 4.05 (*P* < 0.0001) weights: Abolfazli et al. 2011 15.6%, Diouf et al. 2015 20.3%, Dörfer et al. 2004 21.6%, Ghizoni et al. 2012 4.8%, Leira et al. 2016 2.40%, Pradeep et al. 2010 20.7%. The graph for each study included shows the first author, the date of publication, the number of patients with stroke and control, the average clinical attack loss in the two groups with the standard deviation (SD), the mean difference, the weight of the study on the meta-analysis. The final effect of the single study is expressed in a green square with the related confidence intervals (black line crossing the square) while the final effect of the meta-analysis is depicted by the black diamond whose width is given by the confidence intervals.

		stroke			onuror			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
Abolfazli et al. 2011	2.98	1.97	100	2.48	2.11	50	12.6%	0.50 [-0.20, 1.20]	+
Diouf et al. 2015	2	1.657	120	1	0.913	120	25.6%	1.00 [0.66, 1.34]	
Dörfer et al. 2004	4.3	1.33	303	3.87	1.18	300	32.2%	0.43 [0.23, 0.63]	+
Ghizoni et al. 2012	5.1	4.4	20	3.2	2.6	60	2.1%	1.90 [-0.14, 3.94]	
Leira et al. 2016	6.2	2.1	62	3.8	1.2	60	0.0%	2.40 [1.80, 3.00]	
Pradeep et al. 2010	3.99	1.21	100	3.18	0.94	100	27.5%	0.81 [0.51, 1.11]	-
Total (95% CI)			643			630	100.0%	0.72 [0.41, 1.03]	•
Heterogeneity: Tau ² =	0.07; Ch	i² = 11.4	40, df =	4 (P = 0)).02); I⁼÷	= 65%			
Test for overall effect:	Z = 4.61	(P < 0.0	00001)						-4 -2 U 2 4 Favours (Stroke) Favours (control)

Sensitivity analysis, clinical attachment loss forest plot of the random effects model of the meta-analysis, exclusion of Leira et al., 2016 data.

		nove			ond of			mean Dinerence	mean philefelice
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
Diouf et al. 2015	2.7	0.673	120	2.4	0.51	120	25.2%	0.30 [0.15, 0.45]	
Dörfer et al. 2004	4.04	0.97	303	3.72	0.81	300	25.4%	0.32 [0.18, 0.46]	
∋hizoni et al. 2012	2.6	2.4	20	2.4	1.5	60	7.9%	0.20 [-0.92, 1.32]	
eira et al. 2016.	5	1.6	62	3.3	1	60	18.6%	1.70 [1.23, 2.17]	_
Pradeep et al. 2010	4.5	1.16	100	3.65	0.86	100	22.9%	0.85 [0.57, 1.13]	
fotal (95% CI)			605			640	100.0%	0.68 [0.31, 1.06]	-
Heterogeneity: Tau ² =	0.14; Ch	i² = 41.5	58. df =	4 (P ≤ 0	0.0000	1); l² =	90%	-	
Test for overall effect: "	7 = 3.56	(P = 0.0	004				00 /0		-2 -1 0 1 2

FIGURE 4

Forest plot of probing pocket depth, mean difference: 0.68 95% CI [0.31, 1.06], $Tau^2 = 0.14$, Higgins heterogeneity index $l^2 = 90$, $Chi^2 = 41.58$, df (degrees of freedom) 4, *P* value <0.00001, test for overall effect: *Z* = 3.56 (*P* < 0.0004) weights: Diouf et al., 2015 25.2%, Dörfer et al., 2004 25.4%, Ghizoni et al., 2012 7.9%, Leira et al., 2016 18.6%, Pradeep et al., 2010 22.9%. The graph for each study included shows the first author, the date of publication, the number of patients with stroke and control, the average clinical attack loss in the two groups with the standard deviation (SD), the mean difference, the weight of the study on the meta-analysis. The final effect of the single study is expressed in a green square with the related confidence intervals (black line crossing the square) while the final effect of the meta-analysis is depicted by the black diamond whose width is given by the confidence intervals.

	5	Stroke		С	ontrol			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	IV, Random, 95% Cl
Diouf et al. 2015	2.7	0.673	120	2.4	0.51	120	34.7%	0.30 [0.15, 0.45]	
Dörfer et al. 2004	4.04	0.97	303	3.72	0.81	300	35.2%	0.32 [0.18, 0.46]	
Ghizoni et al. 2012	2.6	2.4	20	2.4	1.5	60	4.2%	0.20 [-0.92, 1.32]	
Leira et al. 2016	5	1.6	62	3.3	1	60	0.0%	1.70 [1.23, 2.17]	
Pradeep et al. 2010	4.5	1.16	100	3.65	0.86	100	25.9%	0.85 [0.57, 1.13]	
Total (95% CI)			543			580	100.0%	0.45 [0.20, 0.69]	◆
Heterogeneity: Tau ² =	0.04: Ch	i ² = 12.4	43. df =	3 (P = 0	0.006);	$ ^{2} = 76$	%		<u>t t l l l</u>
Test for overall effect:	Z = 3.59	(P = 0.0)	ດດ້ວງ 🗌						-2 -1 U 1 2

FIGURE 5

Sensitivity analysis, probing pocket depth forest plot of the random effects model of the meta-analysis, exclusion of Leira et al., 2016 data.



FIGURE 6

Forest plot of radiological bone loss, mean difference: 2.15 95% CI [-1.58, 5.89], Tau² = 6.21, Higgins heterogeneity index l^2 = 83, Chi² = 6.02, df (degrees of freedom) 1, *P* value = 0.01, test for overall effect: *Z* = 1.13 (*P* = 0.26) weights: Dörfer et al., 2004 58.2%, Lafon et al., 2014 41.8%, the graph for each study included shows the first author, the date of publication, the number of patients with stroke and control, the average clinical attack loss in the two groups with the standard deviation (SD), the mean difference, the weight of the study on the meta-analysis. The final effect of the single study is expressed in a green square with the related confidence intervals (black line crossing the square) while the final effect of the meta-analysis is depicted by the black diamond whose width is given by the confidence intervals.

ORIGINAL Figures 2-6 appear below.

	5	0	Control			Mean Difference	Mean Difference		
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI	IV, Fixed, 95% Cl
Abolfazli et al. 2011	2.98	1.97	100	2.48	2.11	50	4.1%	0.50 [-0.20, 1.20]	
Diouf et al. 2015	2	1.657	120	1	0.913	120	17.6%	1.00 [0.66, 1.34]	
Dörfer et al. 2004	4.3	1.33	303	3.87	1.18	300	50.0%	0.43 [0.23, 0.63]	■
Ghizoni et al. 2012	5.1	4.4	20	3.2	2.6	60	0.5%	1.90 [-0.14, 3.94]	
Leira et al. 2016	6.2	2.1	62	3.8	1.2	60	5.5%	2.40 [1.80, 3.00]	
Pradeep et al. 2010	3.99	1.21	100	3.18	0.94	100	22.3%	0.81 [0.51, 1.11]	+
Total (95% CI)			705			690	100.0%	0.73 [0.59, 0.88]	•
Heterogeneity: Chi ² =	42.30, df	r= 5 (P -	< 0.000	01); I ² =	88%				
Test for overall effect:	Z = 10.13	3 (P < 0	00001))					-4 -2 U Z 4

FIGURE 2

Forest plot of clinical attachment loss, mean difference: 1.04 95% CI [0.54, 1.54], Tau² = 0.29, Higgins heterogeneity index l^2 = 88, Chi² = 42.30, df (degrees of freedom) 5, *P* value < 0.00001, test for overall effect: *Z* = 4.05 (*P* < 0.0001) weights: Abolfazli et al. 2011 15.6%, Diouf et al. 2015 20.3%, Dörfer et al. 2004 21.6%, Ghizoni et al. 2012 4.8%, Leira et al. 2016 2.40%, Pradeep et al. 2010 20.7%.the graph for each study included shows the first author, the date of publication, the number of patients with stroke and control, the average clinical attack loss in the two groups with the standard deviation (SD), the mean difference, the weight of the study on the meta-analysis. The final effect of the single study is expressed in a green square with the related confidence intervals (black line crossing the square) while the final effect of the meta-analysis is depicted by the black diamond whose width is given by the confidence intervals.



FIGURE 3

Sensitivity analysis, clinical attachment loss forest plot of the random effects model of the meta-analysis, exclusion of Leira et al., 2016 data.

	Stroke				ontrol			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI	IV, Fixed, 95% Cl
Diouf et al. 2015	2.7	0.673	120	2.4	0.51	120	39.5%	0.30 [0.15, 0.45]	-
Dörfer et al. 2004	4.04	0.97	303	3.72	0.81	300	44.4%	0.32 [0.18, 0.46]	
Ghizoni et al. 2012	2.6	2.4	20	2.4	1.5	60	0.7%	0.20 [-0.92, 1.32]	
Leira et al. 2016	5	1.6	62	3.3	1	60	4.1%	1.70 [1.23, 2.17]	
Pradeep et al. 2010	4.5	1.16	100	3.65	0.86	100	11.3%	0.85 [0.57, 1.13]	_
Total (95% CI)			605			640	100.0%	0.43 [0.33, 0.52]	•
Heterogeneity: Chi ² =	41.58, df	í= 4 (P ·	< 0.000	01); I ² =	90%				
Test for overall effect:	Z = 8.81	(P < 0.0	00001)						-2 -1 U 1 2 Favours (Stroke) Favours (control)

FIGURE 4

Forest plot of probing pocket depth, mean difference: 0.68 95% CI [0.31, 1.06], $Tau^2 = 0.14$, Higgins heterogeneity index $l^2 = 90$, $Chi^2 = 41.58$, df (degrees of freedom) 4, *P* value <0.00001, test for overall effect: *Z* = 3.56 (*P* < 0.0004) weights: Diouf et al., 2015 25.2%, Dörfer et al., 2004 25.4%, Ghizoni et al., 2012 7.9%, Leira et al., 2016 18.6%, Pradeep et al., 2010 22.9%. The graph for each study included shows the first author, the date of publication, the number of patients with stroke and control, the average clinical attack loss in the two groups with the standard deviation (SD), the mean difference, the weight of the study on the meta-analysis. The final effect of the single study is expressed in a green square with the related confidence intervals (black line crossing the square) while the final effect of the meta-analysis is depicted by the black diamond whose width is given by the confidence intervals.

	5	Stroke		C	ontrol			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI	IV, Fixed, 95% Cl
Diouf et al. 2015	2.7	0.673	120	2.4	0.51	120	41.2%	0.30 [0.15, 0.45]	
Dörfer et al. 2004	4.04	0.97	303	3.72	0.81	300	46.3%	0.32 [0.18, 0.46]	
Ghizoni et al. 2012	2.6	2.4	20	2.4	1.5	60	0.8%	0.20 [-0.92, 1.32]	
Leira et al. 2016	5	1.6	62	3.3	1	60	0.0%	1.70 [1.23, 2.17]	
Pradeep et al. 2010	4.5	1.16	100	3.65	0.86	100	11.7%	0.85 [0.57, 1.13]	
Total (95% CI)			543			580	100.0%	0.37 [0.28, 0.47]	•
Heterogeneity: Chi ² = 1	2.43, df	f = 3 (P =	= 0.006); l² = 76	6%				
Test for overall effect: 2	Z = 7.54	(P < 0.0	0001)						Favours [Stroke] Favours [control]

Sensitivity analysis, probing pocket depth forest plot of the random effects model of the meta-analysis, exclusion of Leira et al., 2016 data.



The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated. organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated