International Poster Journal IPJ of Dentistry and Oral Medicine

Int Poster J Dent Oral Med 2004, Vol 6 No 01, Poster 215

Age Threshold for the Association of Periodontitis with Ischemic Stroke

Language: English

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Date/Event/Venue:
September 25-28th, 2002
Jahrestagung der CED
Cardiff/Great Britain

Sensodyne-Poster-Studien-Award 2005 for the best poster in 2004

Introduction

Periodontitis is discussed to be an independent risk factor for systemic disease such as cardio- and cerebrovascular disease, COPD, Diabetes mellitus and adverse pregnancy outcomes. However, the nature of the association remains still unclear.

Objectives

Aim of the study was to investigate the influence of the age of a study population on the association between periodontitis and ischemic stroke.

Material and Methods

Subjects and Methods

303 consecutive patients with acute ischemic stroke (T) and 300 representative population controls (C) adjusted for age, gender, ethnicity, time of examination and area of residence.
Subjects were thoroughly examined - both clinically and radiographically - for the presence of periodontitis (number of teeth, caries, restorations, GI, PI, probing pocket depths, clinical attachment levels, furcation defects).
All individuals were interviewed by trained interviewers using a standardized questionnaire that focused on previous diseases, vascular and periodontal risk factors, including smoking, drinking habits and nutrition, social history, previous and present medication, and a detailed assessment of dental care.

Data management and analysis

Statistical Software Package SAS
Double data entry
Data consistency check
Descriptive statistics
Multiple logistic regression analysis
All analyses were done for participants older than 60 and up to 60 years of age.

Results

There is a strong association between either attachment or bone loss and stroke up to the age of 60 years (Fig. 1 and 2).
No association between either attachment or bone loss and stroke has been detected in participants older than 60 years of age (Fig. 1 and 2).
The association between gingivitis and stroke was weaker in participants older than 60 but remained statistically significant (Fig. 3).

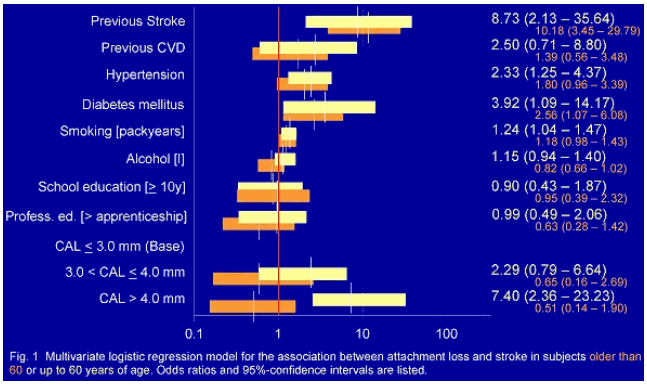

Fig. 1 Multivariate logistic regression model for the association between attachment loss and stroke in subjects older than 60 or up to 60 years of age. Odds ratios and 95%-confidence intervals are listed.

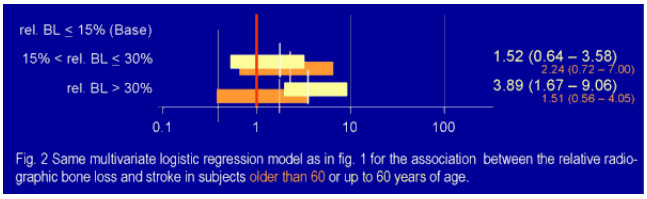

Fig. 2 Same multivariate logistic regression model as in fig. 1 for the association between the relative radio-graphic bone loss and stroke in subjects older than 60 or up to 60 years of age.

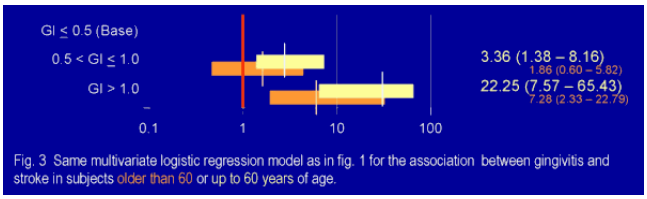

Fig. 3 Same multivariate logistic regression model as in fig. 1 for the association between gingivitis and stroke in subjects older than 60 or up to 60 years of age.

Subjects	**group**	**n (m/f)**	**teeth lost**	**PI**	**GI**	**PPD**	**CAL**
all	stroke	303 (208/95)	12.9 ± 9.5	1.68 ± 0.60	0.97 ± 0.35	4.04 ± 0.96	4.72 ± 1.41
	population	300 (213/87)	8.8 ± 8.3	1.55 ± 0.51	0.68 ± 0.37	3.72 ± 0.82	4.21 ± 1.22
	p		< 0.001	0.003	< 0.001	0.001	< 0.001
≤ 60	stroke	144 (94/50)	9.1 ± 8.5	1.54 ± 0.59	0.91 ± 0.36	4.01 ± 0.93	4.50 ± 1.35
	population	159 (114/45)	6.7 ± 7.1	1.45 ± 0.50	0.61 ± 0.34	3.50 ± 0.59	3.85 ± 0.84
	p		0.008	n.s.	< 0.001	< 0.001	< 0.001
> 60	stroke	159 (114/45)	17.2 ± 9.0	1.86 ± 0.58	1.04 ± 0.33	4.07 ± 1.00	4.96 ± 1.45
	population	141 (99/42)	11.7 ± 9.1	1.68 ± 0.49	0.76 ± 0.38	3.98 ± 0.96	4.66 ± 1.44
	p		< 0.001	0.007	< 0.001	n.s.	n.s.

Tab. 1 Descriptive statistics (mean value ± standard deviation).

Discussion and Conclusions

Associations between chronic periodontitis and cerebrovascular disease seem to be detectable in younger patients, only.

This study was funded by the Deutsche Forschungsgemeinschaft (German Research Council, Grant # Gr1102/3-1).

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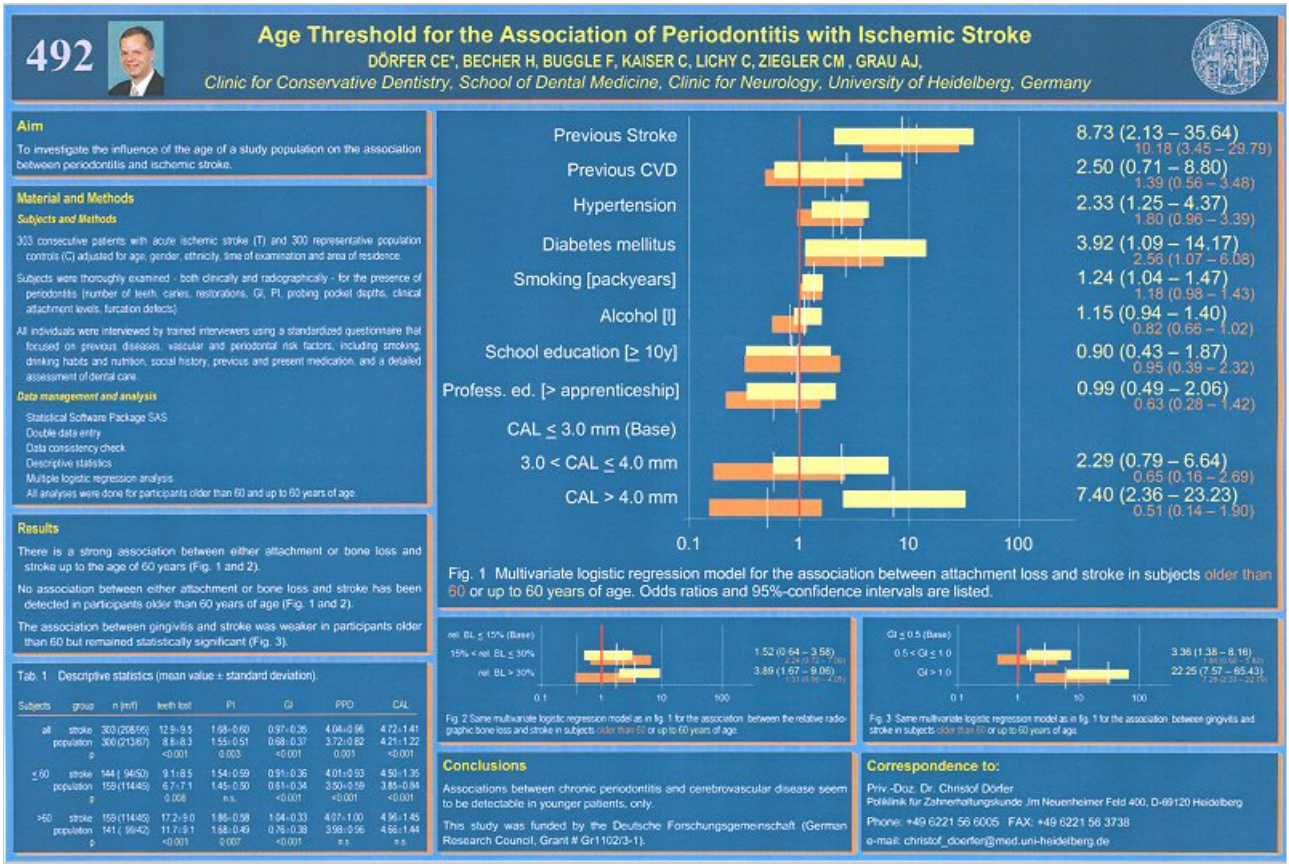

492 Age Threshold for the Association of Periodontitis with Ischemic Stroke

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Clinic for Conservative Dentistry, School of Dental Medicine, Clinic for Neurology, University of Heidelberg, Germany

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Conclusions

Associations between chronic periodontitis and cerebrovascular disease seem to be detectable in younger patients, only.

This study was funded by the Deutsche Forschungsgemeinschaft (German Research Council, Grant # Gr1102/3-1).

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