

Response to: 'Response to: 'Alcohol is not the missing link between *Porphyromonas gingivalis* related periodontitis and radiologic progression in early Rheumatoid arthritis' by Hillion *et al*' by Marotte and Paul

We thank Marotte *et al*¹ for their interest in our study.² They suggested to check interactions between *Porphyromonas gingivalis* serology, smoking and human leucocyte antigen (HLA) status as in the Etude et Suivi des Polyarthrites Indifférenciées Récentes (ESPOIR) cohort and the association between *P. gingivalis* serology status and radiological progression. In the ESPOIR cohort, *P. gingivalis* serology was increased in patients who are non-smokers and with structural damage.³

As suggested, we checked interactions with smoking and HLA status. We could not find any significant interaction between alcohol intake, *P. gingivalis* serology and structural progression in the non-smoking population (table 1). We also ran a multivariate analysis showing that shared epitope,⁴ alcohol intake and *P. gingivalis* serology are not independently associated with structural progression in patient with early RA of ESPOIR cohort (table 2).

Hence, in the ESPOIR cohort, we could not show any influence of *P. gingivalis* serology on structural progression, even in the non-smoking population of early rheumatoid arthritis.

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Table 2 *Porphyromonas gingivalis* serology is not an independent predictor of structural progression in the multivariate logistic regression results

	OR (95% CI)	P value
Model 1		
Smoking status	0.87 (0.64 to 1.26)	0.359
Age	1.04 (1.02 to 1.05)	<0.001
Gender	0.75 (0.50 to 1.10)	0.157
<i>P. gingivalis</i> serology	0.75 (0.47 to 1.21)	0.235
HLA-DRB1 genotype*	1.46 (0.95 to 2.23)	0.078
Model 2		
Smoking status	0.81 (0.59 to 1.11)	0.197
Age	1.05 (1.03 to 1.07)	<0.001
Gender	0.74 (0.48 to 1.11)	0.156
<i>P. gingivalis</i> serology	0.74 (0.46 to 1.22)	0.231
HLA-DRB1 genotype	0.86 (0.53 to 1.40)	0.550
Alcohol intake	1.16 (0.75 to 1.87)	0.520
Baseline DAS28	1.03 (0.86 to 1.23)	0.756
Rheumatoid factor	1.14 (0.78 to 1.67)	0.499
ACPA	2.26 (1.49 to 3.47)	<0.001

P. gingivalis antibodies were measured using a homemade ELISA as previously described.² Patients were considered *P. gingivalis* positive when their anti-*P. gingivalis* antibody titre was above the higher quartile.

Radiological progression was defined as a progression ≥ 1 point/year of modified Sharp/van der Heijde score within the first 5 years of follow-up.

*Shared epitope alleles were HLA-DRB1 *0101, *0102, *0401, *0404, *0405, *0408, *0410, and *1001.³

ACPA, anticitrullinated protein antibody; DAS28, Disease Activity Score 28 joints; HLA, human leucocyte antigen.

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Table 1 Interactions between gender, *Porphyromonas gingivalis* infection and radiological progression of American College of Rheumatology/ European League Against Rheumatism 2010 patients with early rheumatoid arthritis in the ESPOIR cohort

N=533		Non-smoking (N=287)	Smoking (N=246)	OR (95% CI), p value	
Negative <i>P. gingivalis</i> serology (N=399)	No radiological progression	43 (8)	45 (8)	0.79 (0.49 to 1.27), 0.336	0.94 (0.63 to 1.40), 0.763
	Radiological progression	170 (32)	141 (27)		
Positive <i>P. gingivalis</i> serology (N=133)	No radiological progression	19 (4)	17 (3)	0.90 (0.41 to 0.77), 0.767	
	Radiological progression	54 (10)	43 (8)		
Mantel-Haenszel test, p=0.384					
Men (N=116)	No radiological progression	9 (2)	11 (2)	1.8 (0.67 to 4.80), 0.238	0.34 (0.22 to 0.53), <0.001
	Radiological progression	30 (6)	66 (12)		
Women (N=417)	No radiological progression	53 (10)	51 (10)	0.62 (0.40 to 0.98), 0.042	
	Radiological progression	195 (36)	118 (22)		
Mantel-Haenszel test, p=0.201					

Data are presented as number (%) and mean (95% CI).

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Radiological progression was defined as a progression ≥ 1 point/year of modified Sharp/van der Heijde score within the first 5 years of follow-up.

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