

The effect of snuff (smokeless tobacco) on disease activity and function in rheumatoid arthritis

Experiences from BARFOT, a longitudinal multicenter study on early RA

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Conclusion

When we adjusted for socioeconomic class, disease duration, and previous antirheumatic medication, snuff users initially had lower DAS28 levels than never-smokers and previous smokers. No effect of snuff use was seen on HAQ or EULAR response. Our results must be verified in larger studies.

Background

It is not known whether snuff (moist smokeless tobacco) affects disease activity in rheumatoid arthritis (RA).

Objective

To study the effect of snuff on disease activity and function in Swedish patients with early RA.

Methods

Between 1992 and 2005, 2,800 adult patients were included in the BARFOT early RA study in Sweden. Disease Activity Score 28 joints (DAS28), Health Assessment Questionnaire (HAQ), visual analog scale (VAS) for general health, and drug treatment were registered at inclusion and at follow-up after 1, 2, 5 years. European League Against Rheumatism (EULAR) response and remission criteria were applied at 1 year. In 2010, a self-completed postal questionnaire was sent to 2102 patients in the BARFOT study enquiring about lifestyle factors such as smoking and use of snuff. Snuff users were matched for sex with three controls each. The controls were stratified according to smoking status.

Results

Fifty-one patients who used snuff were identified, together with 145 controls. When we adjusted for socioeconomic class, disease duration, and previous anti-rheumatic medication, the snuff users had lower DAS28 values at up to 6 months of follow-up than patients who had never smoked, and they had lower DAS28 values than previous smokers at up to 2 years of follow-up. No effect of snuff use on EULAR response was seen at up to one year.

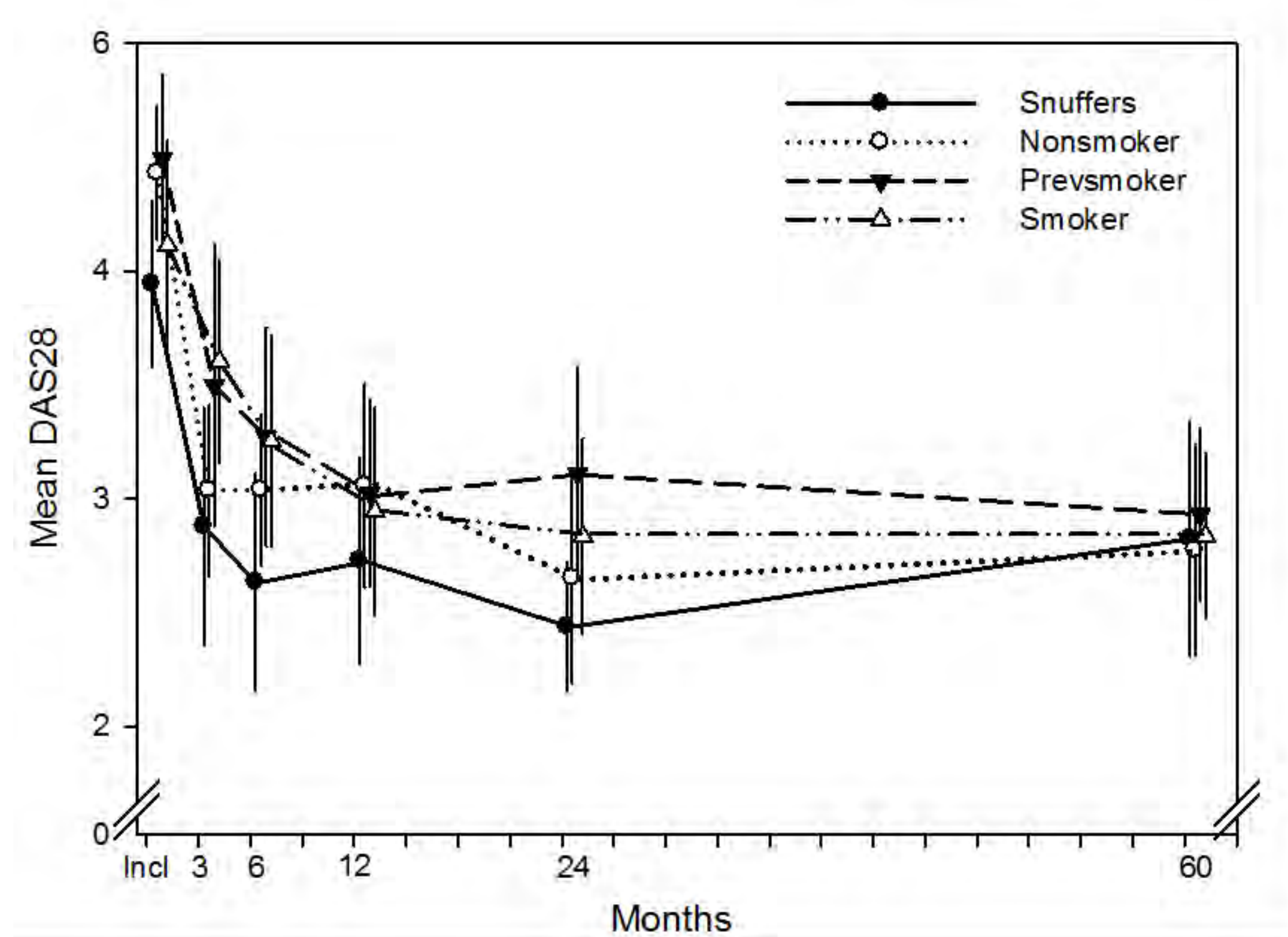


Figure 1. DAS28 values for snuff users as compared to never smokers, previous smokers and current smokers. Non-adjusted data.

Table 1

Demographics and disease characteristics at inclusion in the BARFOT study for the 51 patients who used snuff and the controls. Unless otherwise stated, the values are median (interquartile range). P value denotes the differences between the different patient categories

Variable	Snuff users n = 51	Never smoking controls n=49	Previous smoking controls n=48	Current smoking controls n=48	P value
Age, years	55 (44–61)	53 (45–60)	52 (46–60)	55 (48–62)	0.66
Females, %	26	27	29	29	0.97
HAQ	1.0 (0.6–1.3)	0.75 (0.5–1.0)	0.88 (0.4–1.1)	0.88 (0.5–1.3)	0.41
DAS28	4.9 (4.1–5.8)	5.2 (4.5–5.9)	5.1 (4.0–6.1)	5.3 (4.4–6.0)	0.72
VAS global, mm	40 (21–60)	45 (31–62)	42 (18–58)	40 (21–61)	0.75
VAS pain, mm	49 (27–60)	42 (23–61)	35 (21–54)	39 (29–61)	0.56
No. of swollen joints (of 28)	9 (7–13)	10 (6–13)	9 (5–14)	9 (6–11)	0.58
No. of tender joints (of 28)	6 (2–10)	7 (3–11)	5 (2–11)	8 (3–13)	0.59
ESR	24 (13–51)	31 (16–49)	28 (12–50)	26 (12–44)	0.69
CRP	20 (9–33)	18 (9–42)	24 (9–52)	16 (9–41)	0.64
DMARDs, %	80	86	87	83	0.80
Glucocorticoids, %	22	31	35	38	0.35
Current smoker: status at inclusion in the study, %	0	0	0	100	NA
RF positive, %	68	69	52	77	0.13

HAQ = Health Assessment Questionnaire, VAS = visual analog scale, DMARDs = disease-modifying anti-rheumatic drugs, DAS28 = Disease Activity Score (28 joints), ESR = erythrocyte sedimentation rate, CRP = C-reactive protein, RF = rheumatoid factor, NA=not available.