

Statistical methodology supplementary information

Multiple imputations were performed in Stata version 10 using the ICE command. Missing data were present in the following variables: smoking, disease duration, baseline HAQ, and baseline DAS28 score (Table S1). The imputation model was constructed separately for the nbDMARD and anti-TNF cohorts. Age, gender, disease duration, baseline HAQ, baseline DAS28 score, smoking status, entry year, baseline steroid exposure and prior nbDMARD use were all included as predictors within the imputation model. Twenty imputation cycles were performed and the resulting data were analysed using Rubin's rules with the MIM command.

Table S1 Missing baseline data

Variable; N missing (%)	nbDMARD N=3629	Anti-TNF N=11881
Disease duration	23 (0.6)	87 (0.7)
HAQ score	728 (19.8)	590 (5.0)
DAS 28 score	55 (1.5)	111 (0.9)
Smoking	18 (0.5)	77 (0.7)

Adjusting for confounders was performed using an inverse probability of treatment weighting score. A probability of treatment (propensity) score was generated using logistic regression. The inverse of the probability (or 1 minus the inverse of the probability in the nbDMARD cohort) was then used as the treatment weight in the analysis. Weights greater than 20 that would de-stabilise the model were replaced with the value of 20.

Table S2 Results of univariate analysis for BCC in the imputed dataset

	Hazard ratio	95% confidence interval
Age (per year)	1.08	1.06, 1.09
Gender (male ref)	0.69	0.51, 0.94
Smoking (current smoker ref)		
Ex smoker	2.21	1.40, 3.50
Never smoker	1.81	1.14, 2.89
Entry year (pre 2003 ref)		
2003	0.77	0.51, 1.19
2004	0.63	0.40, 0.99
2005	0.73	0.44, 1.23
2006	0.71	0.37, 1.39
2007	0.98	0.42, 2.28
2008	1.50	0.34, 6.64
Disease duration (per year)	1.02	1.01, 1.04
DAS 28	0.97	0.87, 1.09
HAQ	1.14	0.90, 1.44
Baseline steroids	1.22	0.92, 1.63
Baseline NSAID	0.59	0.45, 0.79
Exposure to azathioprine	1.53	1.11, 2.11
Exposure to ciclosporin	1.56	1.11, 2.20

Table S3 Results of univariate analysis for SCC in the imputed dataset

	Hazard ratio	95% confidence interval
Age (per year)	1.12	1.07, 1.17
Gender (male ref)	0.29	0.14, 0.63
Smoking (current smoker ref)		
Ex smoker	2.48	1.02, 11.83
Never smoker	1.07	0.27, 4.28
Entry year (pre 2003 ref)		
2003	1.25	0.32, 4.91
2004	3.12	0.77, 12.69
2005	1.67	0.24, 11.71
2006	2.99	0.41, 21.55
2007	5.29	0.43, 64.70
2008	No events	
Disease duration (per year)	0.99	0.95, 1.03
DAS 28	0.77	0.58, 1.03
HAQ	0.86	0.47, 1.58
Baseline steroids	1.23	0.57, 2.62
Baseline NSAID	0.45	0.21, 0.97
Exposure to azathioprine	1.06	0.43, 2.63
Exposure to ciclosporin	0.54	0.16, 1.82