

ONLINE REPOSITORY

STATISTICAL ANALYSES

Data summarization

Categorical data were summarized by frequencies and percentages, and continuous scaled data were summarized by the mean and SD of the distribution.

Relationship of SNOT-22 to tissue eosinophilia

Spearman rank correlation analyses were conducted to examine the relationship of the preoperative SNOT-22 composite score with “average” and “peak” tissue eosinophilia count. Spearman rank correlation analyses were also conducted to examine whether the individual components of the preoperative SNOT-22 were related to “average” and “peak” eosinophilia count. With regard to hypothesis testing, all tests of association were designed to test the null hypothesis that the true underlying correlation coefficient is equal to zero, with the alternative hypothesis that the true underlying correlation coefficient is not equal to zero. A $P \leq .05$ decision rule was established *a priori* as null hypothesis rejection criterion.

Relationship of medical history, sinus CT, and blood biomarkers with tissue eosinophilia

Comparisons of “average” and “peak” tissue eosinophilia count in relationship to asthma status, AR status, smoking status, and AERD status were conducted via the 2-sample Welch test. The 2-sample Welch test is similar to the 2-sample Student *t* test, but unlike the 2-sample Student *t* test, the 2-sample Welch test does not require the underlying variances of the 2 study populations to be equal. With regard to hypothesis testing, all the 2-sample Welch tests were designed to test the null hypothesis that the underlying means of the tissue eosinophilia distributions (eg, comparison of average tissue eosinophilia) are equal, with the

alternative hypothesis that the underlying means of the tissue eosinophilia distributions are not equal. A $P \leq .05$ decision rule was established *a priori* as the null hypothesis rejection criterion.

Blood biomarker (absolute eosinophilia count and total IgE) and the Lund-MacKay score relationships with tissue eosinophilia were examined by comparing the geometric means of the blood biomarker distributions between patients who were grouped according to the tertiles of the “tissue average eosinophilia count” empirical distribution. In the framework of ANOVA, an *F* test was used to test the null hypothesis that the geometric means of the biomarker distributions (eg, absolute eosinophilia count distributions) are irrespective of “tissue average eosinophilia” tertile, with the alternative that the geometric means of the biomarker distributions are “tissue average eosinophilia” tertile dependent. A $P \leq .05$ null hypothesis rejection criterion was established *a priori* as the null hypothesis rejection criterion for the *F* test.

Postoperative medical outcome

Postoperative improvement in SNOT-22 scores was analyzed as a function of eosinophil content of NP tissue. Spearman rank correlation analyses were conducted to examine the relationships of the preoperative to postoperative change in the SNOT-22 score to “tissue average” and “tissue peak” eosinophilia. A $P \leq .05$ null hypothesis rejection criterion was established *a priori* as the null hypothesis rejection criterion for rejecting the null hypothesis of zero bivariate correlation, versus the alternative hypothesis of nonzero bivariate correlation.

Statistical software

The Spotfire Splus version 8.2 statistical package (TIBCO Inc, Palo Alto, Calif) was used to conduct the aforementioned set of statistical analyses.

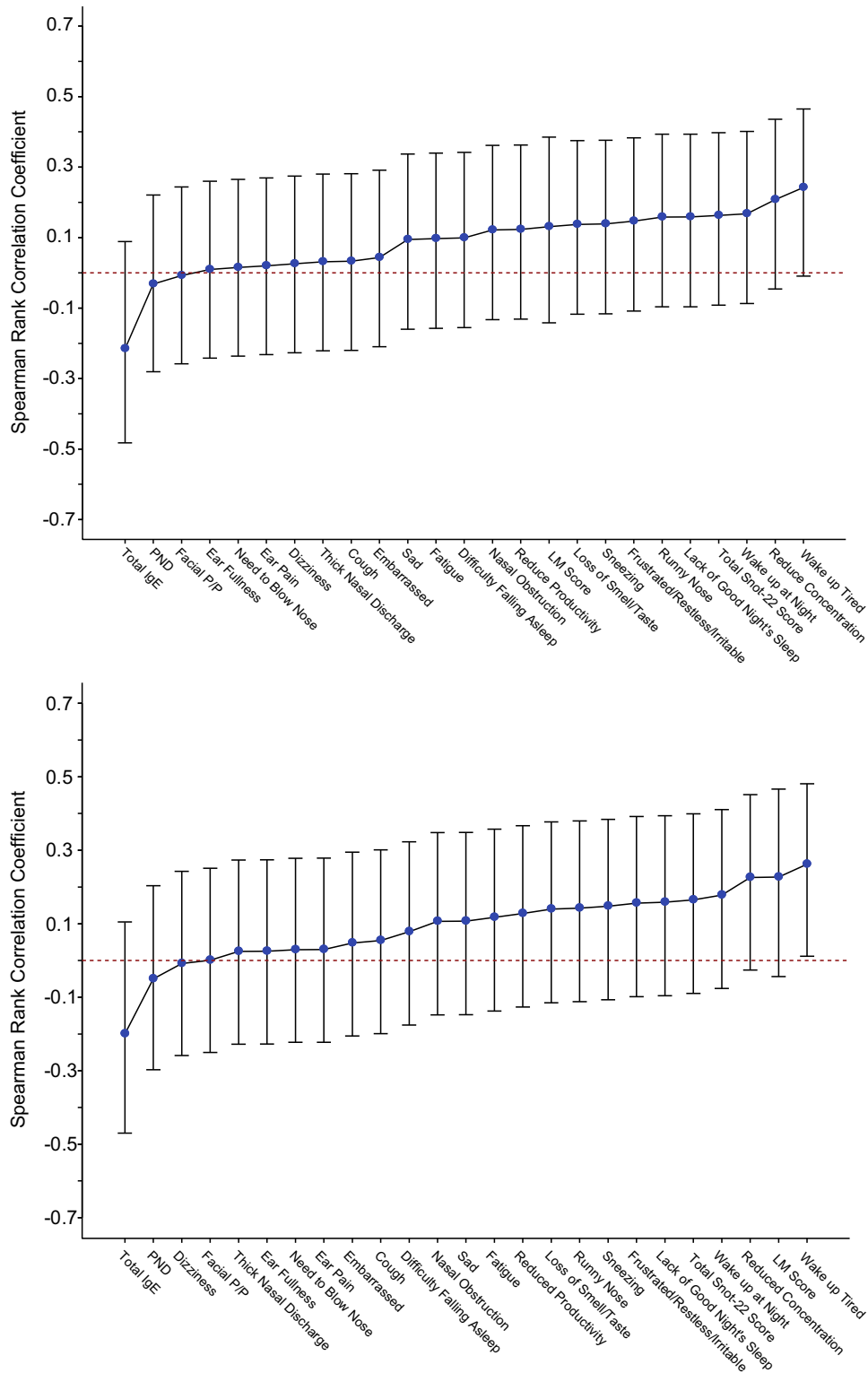


FIGURE E1. Correlation of individual components of the SNOT-22, total IgE, and LMS with average (A) and peak (B) tissue eosinophilia. Blue circles identify the estimate for the Spearman rank correlation coefficient, and vertical lines identify the 95% CI. LMS, Lund-Mackay score; P/P, pain and pressure; PND, post nasal drip.

TABLE E1. Spearman correlations coefficients (r_s) for correlation of individual components of the SNOT-22, and IgE and LMS with average and peak tissue eosinophilia

Average tissue eosinophilia				Peak tissue eosinophilia			
Correlate	r_s	95% CI	P value	Correlate	r_s	95% CI	P value
Total IgE	-0.22	-0.48 to 0.09	.151	Total IgE	-0.20	-0.47 to 0.10	.183
PND	-0.03	-0.28 to 0.22	.801	PND	-0.05	-0.30 to 0.20	.693
Facial P/P	-0.01	-0.26 to 0.24	.952	Dizziness	-0.01	-0.26 to 0.24	.947
Ear fullness	0.01	-0.24 to 0.26	.939	Facial P/P	0.00	-0.25 to 0.25	.997
Need to blow	0.02	-0.24 to 0.27	.903	Thick nasal discharge	0.02	-0.23 to 0.27	.846
Ear pain	0.02	-0.23 to 0.27	.875	Ear fullness	0.03	-0.23 to 0.27	.843
Dizziness	0.03	-0.23 to 0.27	.840	Need to blow nose	0.03	-0.22 to 0.28	.815
Thick nasal discharge	0.03	-0.22 to 0.28	.803	Ear pain	0.03	-0.22 to 0.28	.813
Cough	0.03	-0.22 to 0.28	.795	Embarrassed	0.05	-0.21 to 0.30	.706
Embarrassed	0.04	-0.21 to 0.29	.731	Cough	0.05	-0.20 to 0.30	.667
Sad	0.09	-0.16 to 0.34	.454	Difficulty falling asleep	0.08	-0.18 to 0.32	.535
Fatigue	0.10	-0.16 to 0.34	.441	Nasal obstruction	0.11	-0.15 to 0.35	.397
Difficulty falling asleep	0.10	-0.16 to 0.34	.431	Sad	0.11	-0.15 to 0.35	.395
Nasal obstruction	0.12	-0.13 to 0.36	.334	Fatigue	0.12	-0.14 to 0.36	.352
Reduced productivity	0.12	-0.13 to 0.36	.328	Reduced productivity	0.13	-0.13 to 0.37	.309
LMS	0.13	-0.14 to 0.39	.332	Loss smell/taste	0.14	-0.12 to 0.38	.267
Loss smell/taste	0.14	-0.12 to 0.38	.275	Runny nose	0.14	-0.11 to 0.38	.257
Sneezing	0.14	-0.12 to 0.38	.271	Sneezing	0.15	-0.11 to 0.38	.240
Frustrated/restless/irritable	0.15	-0.11 to 0.38	.244	Frustrated/restless/irritable	0.16	-0.10 to 0.39	.214
Runny nose	0.16	-0.10 to 0.39	.208	Lack of good night's sleep	0.16	-0.10 to 0.39	.207
Lack of good night's sleep	0.16	-0.10 to 0.39	.207	Total SNOT-22 score	0.17	-0.09 to 0.40	.189
Total SNOT-22 score	0.16	-0.09 to 0.40	.195	Wake up at night	0.18	-0.08 to 0.41	.156
Wake up at night	0.17	-0.09 to 0.40	.183	Reduced concentration	0.23	-0.03 to 0.45	.070
Reduced concentration	0.21	-0.05 to 0.44	.097	LMS	0.23	-0.04 to 0.47	.090
Wake up tired	0.24	-0.01 to 0.46	.052	Wake up tired	0.26	0.01 to 0.48	.035

LMS, Lund-Mackay score; P/P, pain and pressure; PND, post nasal drip.