One subject with history of allergic rhinitis underwent nasal challenge tests before and after two weeks of treatment with MFNS, two sprays per nostril daily. Both tests were conducted during the symptom-free winter season; however, a “minimal persistent inflammation” could be assumed. High-resolution MRI was used to capture, visualize, and process the geometrical data of the nasal cavity at baseline and immediately following allergen challenge. Data used to compute nasal airflow were the air flow velocity and pressure distributions of the associated flows which were visualized in 3D. Results were validated by rhinomanometry and acoustic rhinometry.

**CONCLUSIONS**

3D visualization of spatial distribution of mucosal swelling in the nasal cavity showed that MFNS treatment has a protective effect after allergen challenge. The standard clinical examination techniques do not always clearly show the reduction of nasal flow after allergen challenge, which was expected. MFNS-based flow simulation may become an important additional tool for nasal flow diagnosis.

**REFERENCES**


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