

Budesonide nebulised as Pulsating Aerosol – Therapy Option for Impairment of Sense of Smell resulting from Chronic Sinusitis. A Case Study.

Hoegerle Catalina¹, Haack Mareike², Kirschbaum Constantin von¹, Weiss Bernhard G¹., Canis Martin¹, Mentzel Heribert³

¹Klinik und Poliklinik für Hals-Nasen-Ohren-Heilkunde. Direktor: Prof. Dr. med. M. Canis, München, DE; ²HNO-Zentrum Mangfall-Inn, Rosenheim, DE; ³PARI GmbH, Starnberg, DE

Introduction and Question: Impairment in the sense of smell can result from inflammatory, traumatic, tumour-related, toxic or anatomical causes. To the fore is the nasal obstruction in the case of chronic / chronic recurring infections of the nose and paranasal sinuses, infections or influenza. Allergies or polyposis nasi can also result in a the sense of smell being impaired.

Material and Methods: The therapy with pharmaceuticals is often based on nasal corticosteroids administered with a pump spray. As pump sprays only reach the main nasal cavity, the pulsating aerosol system PARI SINUS (Image 1), was developed to access the difficult-to-reach olfactory region and paranasal sinuses.

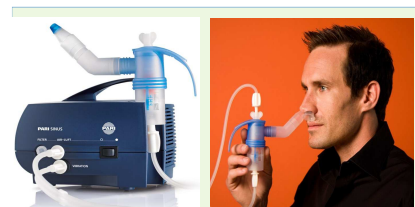


Image 1: PARI SINUS and its Use

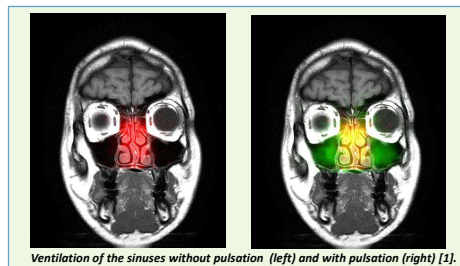


Image 2: Overlay of von szinitigraphical und MRT-Images [1].

The pulsation delivered by the device enables the deposition of aerosol particles in the non-ventilated areas of the upper airways, which are largely inaccessible for conventional application forms such as nasal drops, nasal showers or conventional forms of inhalation. (Image 2).

Results: Patient A (83 J), chronic rhinosinusitis, no pre-operation, functional anosmia (SDI 14); no improvement reported after 4,5 months of diverse therapies. Subjective/objective improvement (SDI 24,75) after pulsating budesonide aerosol (1mg 2x daily) for 2 months (Image 3).

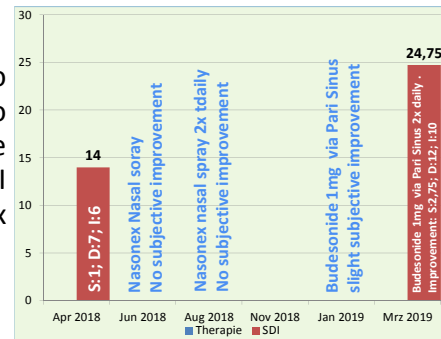


Image 3: Case Study Patient A

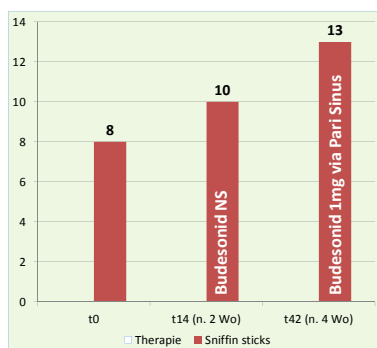


Image 4: Case Study Patient B

Patient B (30 J),

Polyposis nasi (Gr II re, Gr I-II li), nasal obstruction, recurring sinusitis, impairment of smell (Sniffin' Sticks re/li 8): Slight improvement after 2 weeks using nasal sprays with steroids (Sniffin' Sticks 10). Further improvement after pulsating aerosol with budesonide (1mg 2x daily) for 4 weeks (Sniffin' Sticks 13) (Image 4).. During therapy reduction in polyposis Grade I-II right and remission on the left (measured by MRT).

Conclusion: Difficult-to-reach areas of the upper airways can be reached with anti-inflammatory, antibacterial or mucolytic medications nebulised with pulsating aerosol. In the form of pulsating aerosol, budesonide is a therapy option for impairment in sense of smell where nasal sprays have been unsuccessful. Further research seems desirable and promising.

Literature: [1] Möller, W. et al. (2009). Ventilation and aerosolized drug delivery to the paranasal sinuses using pulsating airflow – a preliminary study. Rhinology 47: 405