



POSTER PRESENTATION

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# Allergic fungal rhinosinusitis (AFRS) - more than a fungal disease?

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From 9th Symposium of Experimental Rhinology and Immunology of the Nose (SERIN 2013) Leuven, Belgium. 21-23 March 2013

Allergic fungal rhinosinusitis (AFRS) is characterized by the growth of fungi, mostly *Aspergillus* sp., in the paranasal sinuses together with the formation of nasal polyps, peanut-butter like “allergic mucin” with fungal hyphae and typical CT-findings, as well as increased serum total IgE and *Aspergillus*-specific IgE concentrations. We here hypothesize that the increase in serum total IgE is caused by the local symbiosis of *Asp.* sp. with *Staphylococcus aureus*, a germ which is known for the production of enterotoxins with superantigenic properties. We demonstrate the presence of *S. aureus* specific IgE antibodies in the sera of AFRS patients, correlating with total serum IgE concentrations, as well as the coexistence of both, *A. fumigatus* and *S. aureus*, in biofilm-like formations on the sinus mucosa. Similar mechanisms and findings may apply for Allergic Broncho-Pulmonary Aspergillosis/Mykosis (ABPA/M). This knowledge may result in new diagnostic and therapeutic approaches including anti-IgE strategies.

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Published: 16 July 2013

doi:10.1186/2045-7022-3-S2-P15

**Cite this article as:** Dutre et al.: Allergic fungal rhinosinusitis (AFRS) - more than a fungal disease? *Clinical and Translational Allergy* 2013 **3** (Suppl 2):P15.

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