

# Diagnosics of Invasive Aspergillosis: From Experimental Models to Clinical Evaluation.

## Chronic Colonization Model

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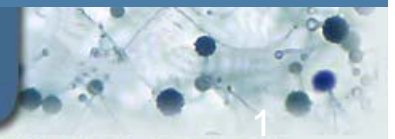
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# Aspergillus Colonization

- Common in chronic airway disease
- Up to 50% of Cystic Fibrosis patients
- 5-10% develop hypersensitivity (ABPA)
- Yet all pts manifest decline in lung function
- New diagnostics should distinguish colonization from infection

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# Update

- At last IAAM meeting presented our proof of principle data for a model of colonization
- Have now extended studies to 28 days
- Detailed comparison with controls
- Characterizing the inflammatory response
- Testing for hypersensitivity

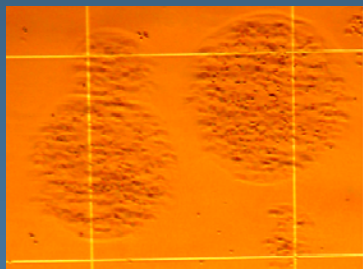
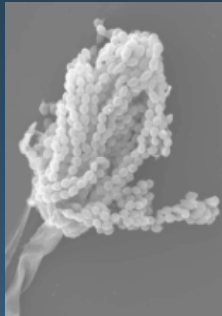
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# Colonization model

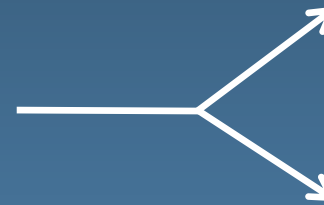


Agar bead  
encapsulated  
conidia

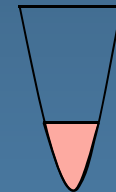


Intratracheal  
injection

C57BL/6J



Histology



GM assay

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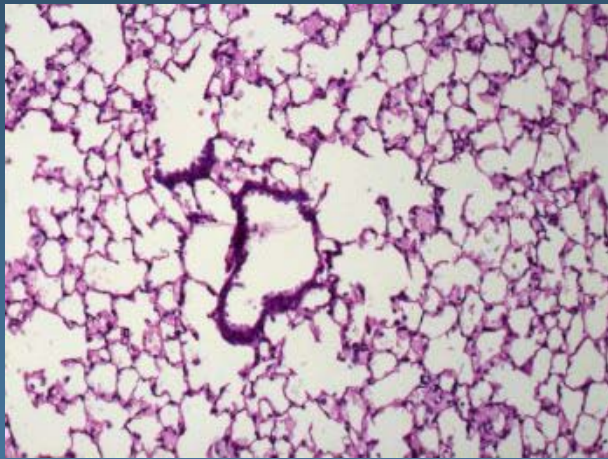
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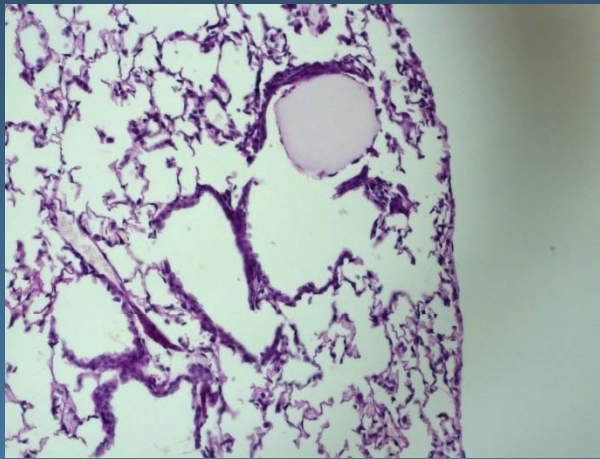
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# Histopathology of lungs

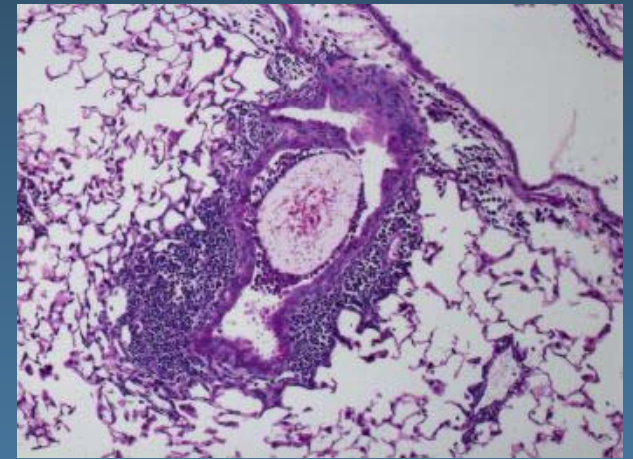
Uninfected airways



Sterile beads



*A. fumigatus* beads



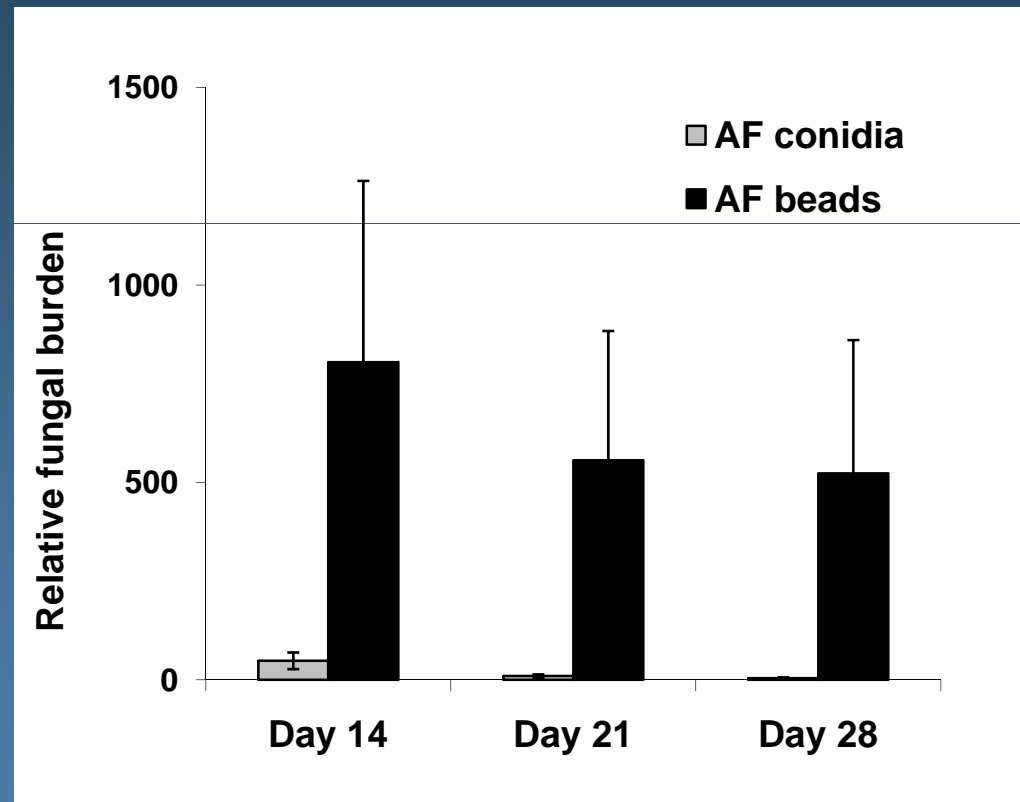
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# Pulmonary Galactomannan Content

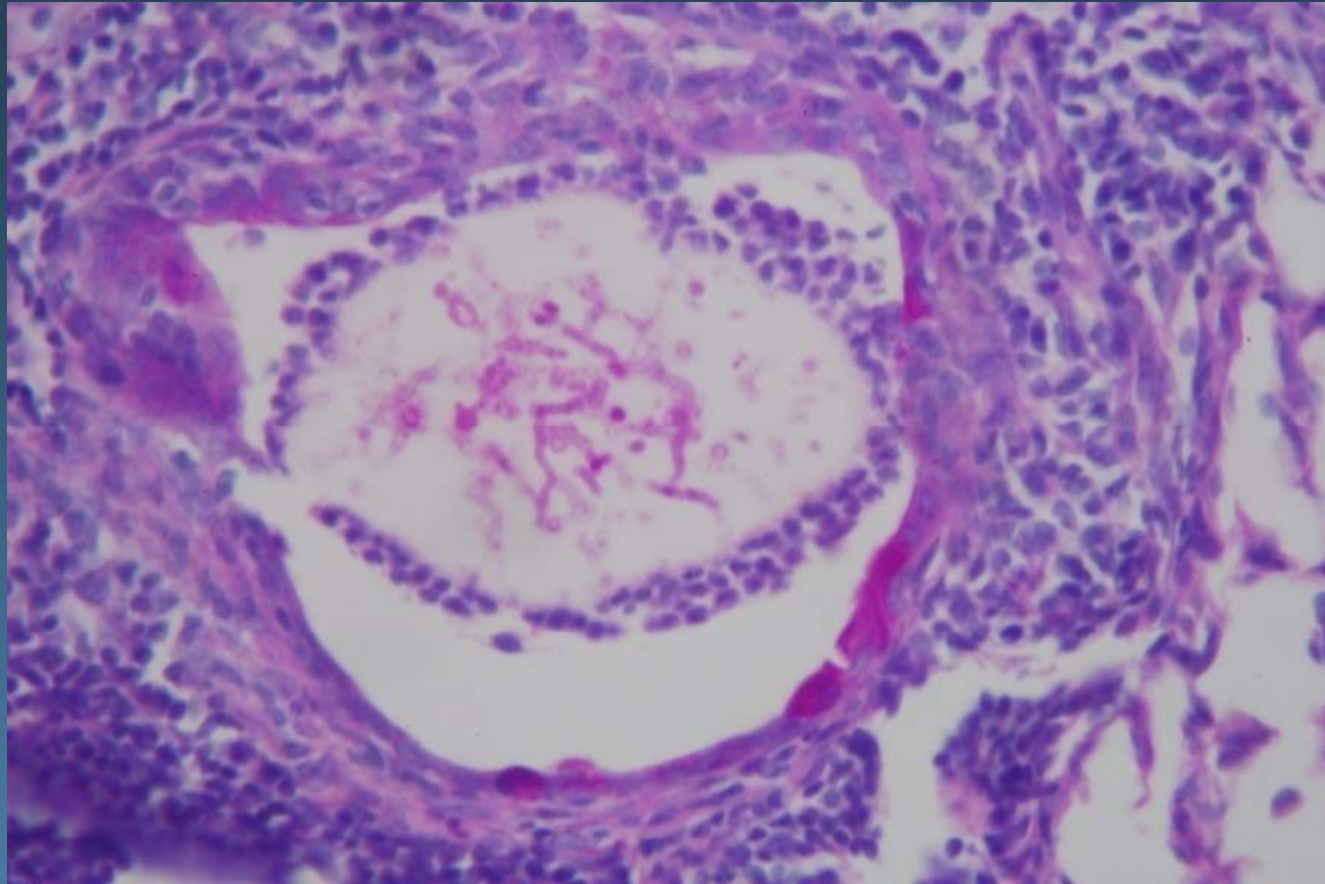


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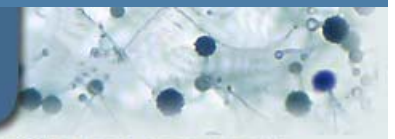
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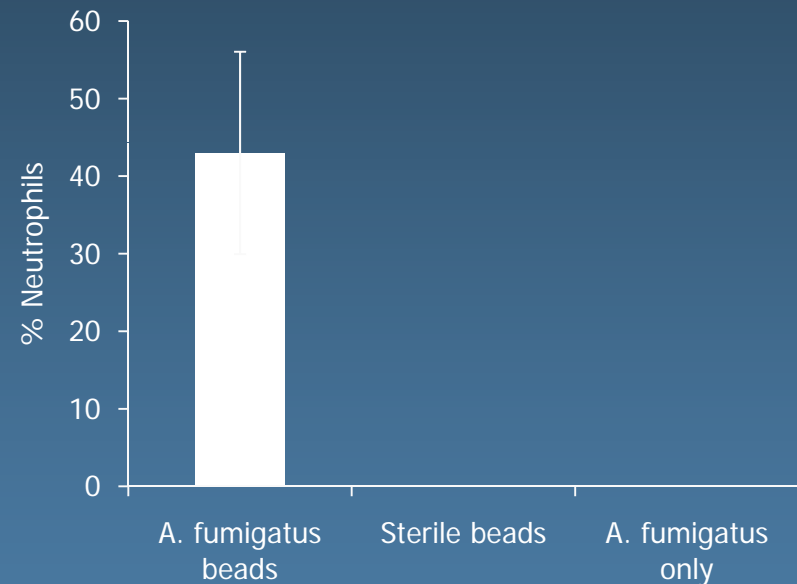
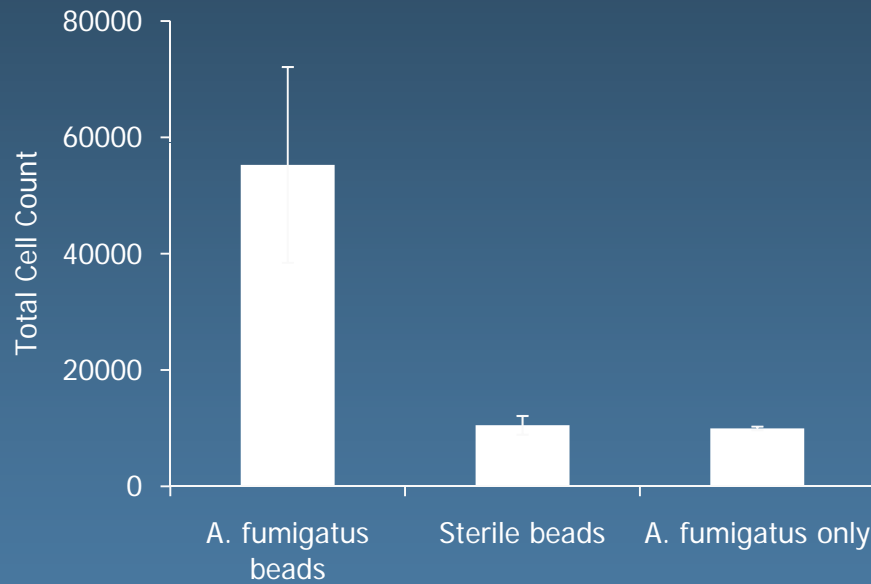
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# Cellular Inflammation (BAL)



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# Cytokines

- Assayed cytokine profile in lung homogenates and BAL fluid at 14, 21 and 28 days
- Inflammatory cytokines assayed using Luminex cytometric bead array (20 cytokines and chemokines)

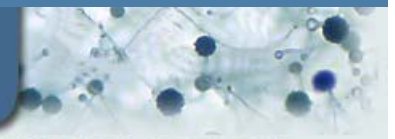
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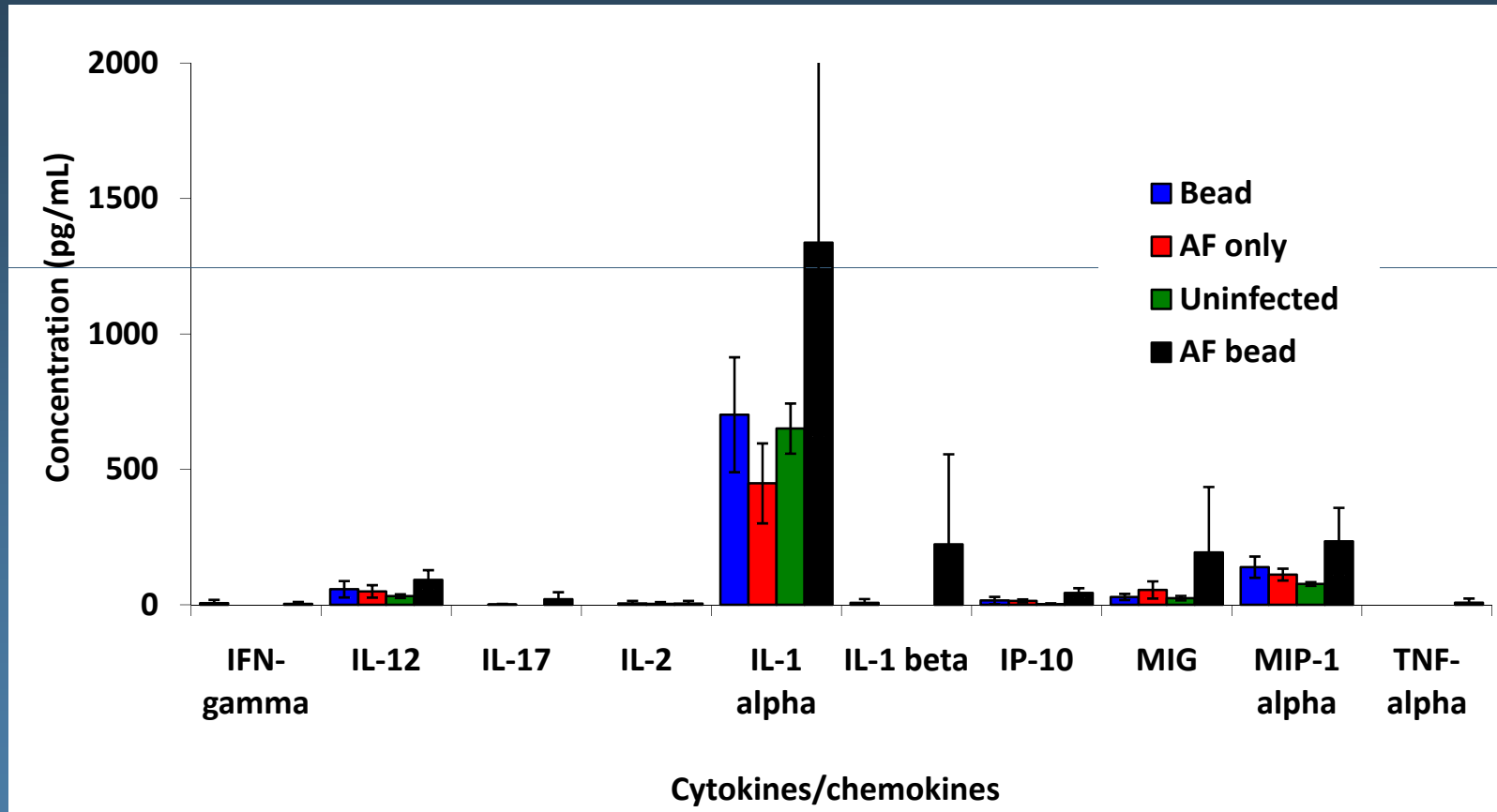
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# Inflammatory Markers (d14)



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# Cytokines

- No other significant increase in cytokines including:
  - IL-10, IL-4, IL-5, IL-6, IL-13
  - GM-CSF, VEGF
- Slight induction of KC
- BAL specimens mirrored these results but with lower absolute levels detected
- Only significant at d14 - ? Too late

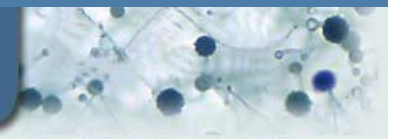
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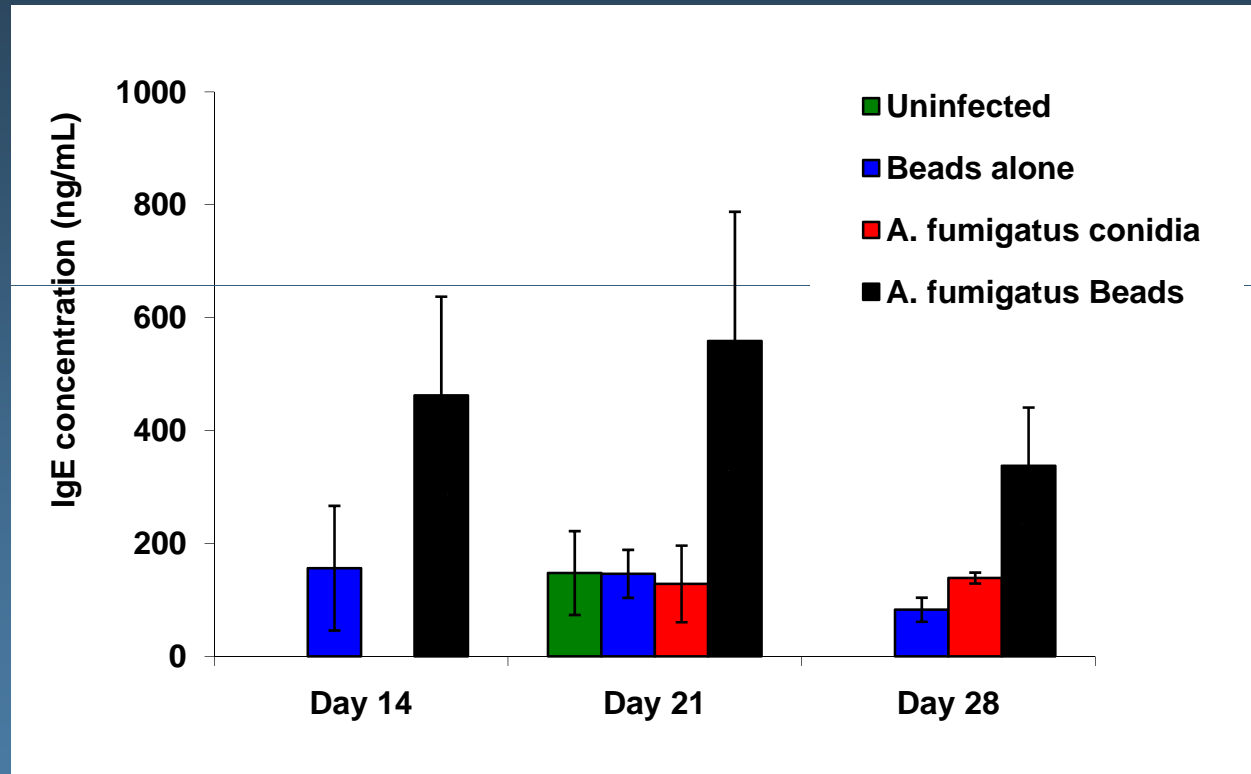
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# IgE



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# Future Plans

- Inflammatory markers at D7
- Evaluate existing serum markers
  - Serum GM
  - $\beta$ -d-glucan course
- Pulmonary function and airway hyper-reactivity

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