CHEST Online Supplement

Breath Analysis in Pulmonary Arterial Hypertension

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e-Appendix 1.

Unique Metabolic Breathprint of Pulmonary Arterial Hypertension (PAH) Compared to Other Disease Groups and Controls

In preparation for the current study, we have compared the breathprint of patients with PAH to that of individuals with other lung disease (asthma) and systemic (liver) disease and found that the PAH breath signature by SIFT-MS remains unique. Using 39 discriminant masses we were able to classify individuals as asthmatics, PAH, liver disease, or Controls. We had 88 subjects and the model only misclassified 1 subject (accuracy = 98.9%). About 1/3 of the subjects were not initially used to create the discriminant masses and they were still classified correctly. The canonical Plot 3D (Figure) has all disease groups displayed. Clear separation between the groups with no overlap indicates that each group has a different breathprint.

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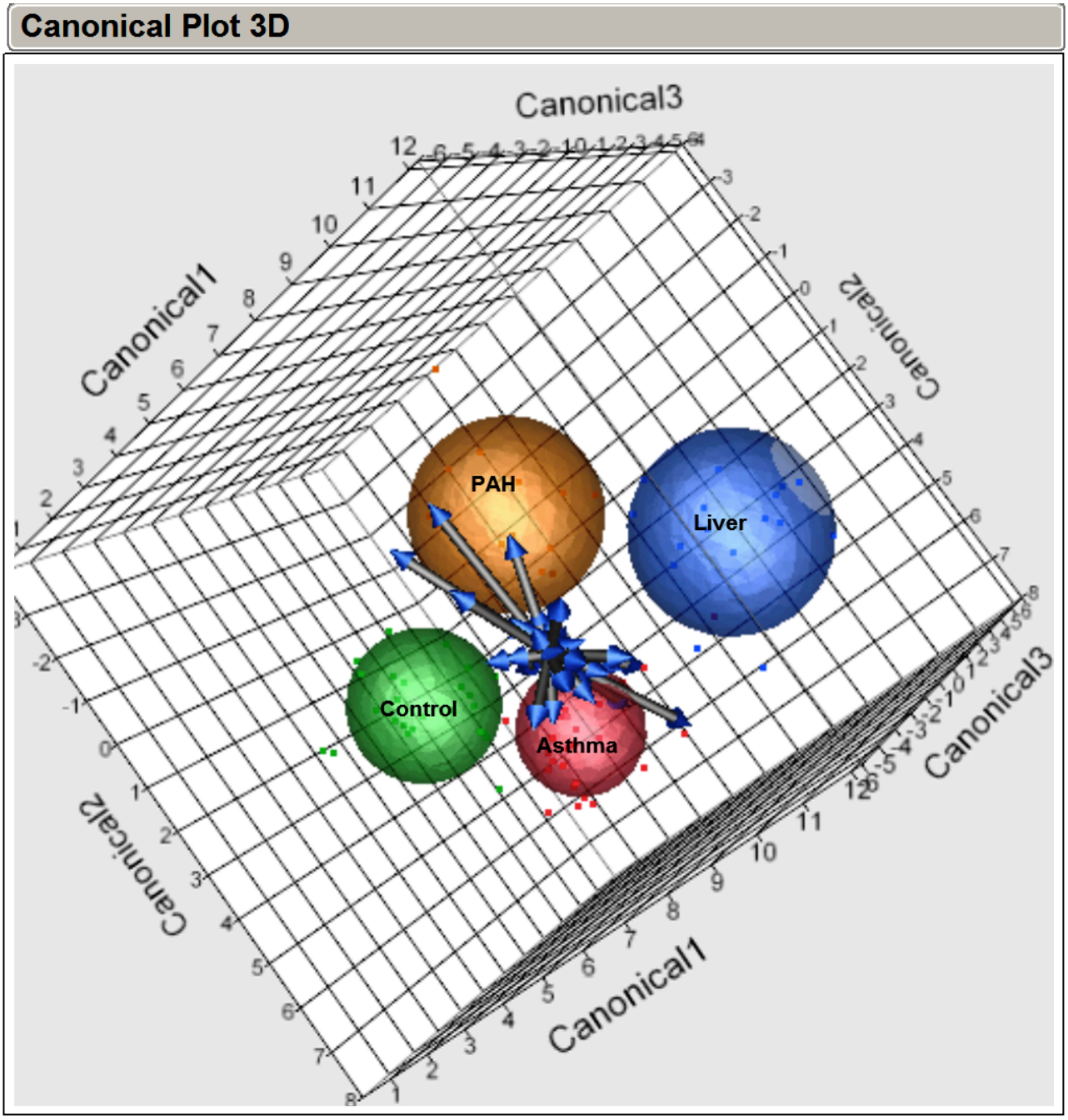

e-Figure 1: Canonical discriminant analysis was performed in a cohort of 32 asthma, 17 liver disease , and 14 PAH patients in addition to 25 control subjects. Only one individual with asthma was misclassified as liver disease for an overall accuracy of 98.9%.

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