Hypothesis
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In guinea pigs which are sensitized with ovalbumin for 4 weeks and are on normal diet for 4 weeks, when challenged with ovalbumin,

1. there would be airway hyperreactivity
2. there would be oxidative stress
3. there would be an increase in the basal activities of airway sensory receptors connected to myelinated vagal afferents
4. there would be an increase in the sensitivities of these airway receptors to bronchoactive agent such as histamine.

In the above model, instead of the normal diet, when the diet is supplemented with antioxidants such as vitamin E and vitamin C,

5. there would be partial reversal in the airway hyperresponsiveness, oxidative stress and the augmentation in the basal activities of airway sensory receptors and their response to histamine.

Outcome

Besides establishing that oxidative stress may be an underlying mechanism for asthma, the study may highlight the roles of airway rapidly adapting receptors and slowly adapting receptors connected to myelinated vagal afferents in the respiratory symptoms associated with asthma.