

# **Prevalence and Risk Factors in Relation to Both IgE and IgG Cow's Milk Protein Allergies in Saudi Arabia: A Retrospective Study**

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## **ABSTRACT**

### **Background:**

Cow Milk Protein Allergies (CMPA) occur particularly in infancy and early childhood, owing to an immunological allergic reaction to milk proteins.

### **Objective:**

Investigate the important aspects of IgE and IgG CMPA in Saudi Arabia in terms of prevalence and its association with demographic and health related factors in adult and pediatric population.

### **Method:**

A retrospective study conducted on 376 patients (314 adults, 62 pediatric) who attended to a private medical center in Jeddah city from May 2015 up to October 2020. Data were collected and extracted from the electronic record system. Adult patients aged from 19 to 86 years and pediatric patients from 9 months to 18 years old were enrolled. Laboratory results for food allergy of IgE and IgG test including cow milk proteins (CMPs) were collected. Serum 25-hydroxyvitamin D (25OHD), specific IgE inhalant allergy results and other health related factors were also collected.

### **Results:**

Food sIgE measured in 295 adults. Casein was the most common sensitizing allergen of CMPs in 43 subjects (14.6%), followed by  $\alpha$ -lactalbumin 40 (13.5%). In pediatric, out of 58 child,  $\alpha$ -lactalbumin was the most common sensitizing one in 20 (34.5%), followed by milk 11 (19%). The most frequent sensitizing allergen in IgG CMP was the cow milk in 54/92 adults (58.7%), followed by cow sour milk products 41 (44.6%). Cow milk was the most common sensitizing allergen in 20/20 child (100%). The rate of CMPA was significantly higher in children younger than 5 years old (p-value=0.003) while Children who interact with pets had a marginal significantly reduced rate (p-value=0.054).

**Conclusion:**

Casein and  $\alpha$ -lactalbumin are the most common sensitizing allergens in IgE CMPs. Cow milk is the most sensitizing allergen in IgG CMPs in adult and pediatric. CMPA associated with decreased child's age while children in contact with pets have marginal reduced rate.

