Perspective

Nomogram for Predicting Food Allergy in Newborns with Feeding Issues and Malnutrition

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DESCRIPTION

The term food allergy refers to a variety of immunological reactions, including Immunoglobulin E (IgE) mediated reactions, non-IgE mediated reactions, and combined IgE and non-IgE mediated reactions that occur reproducibly after exposure to a particular meal. Infants and young children frequently have feeding issues. Up to 88% of newborns with feeding difficulties were observed to become sensitised to various food allergies, one of several medical issues connected to feeding difficulties. Not only are the first two years of life important for growth and development, but they are also the time when food allergies are most likely to develop in children. Without prompt and appropriate solutions, the eating issues during this time can have significant negative nutritional, developmental, and psychological effects. However, there are currently just a few studies that concentrate on food allergy in newborns with feeding issues, paediatricians should pay more attention to this issue.

Due to its high accuracy, the Oral Food Challenge (OFC) is still the gold standard for diagnosing food allergies. The technique can be expensive, time- and resource-consuming, and in some situations, risky, which limits its use to hospitals with medical facilities that are equipped and where healthcare professionals have received the necessary training. Although there are other tests that can help with food allergy diagnosis, such as the Skin Prick Test (SPT), IgE test, intradermal test, and atopy patch test, these tests only serve to identify food allergens and diagnose food allergies involving IgE, and some of the tests even have low specificity and sensitivity. In order to conserve resources and expedite diagnoses, it is recommended that infants with a high suspicion of food allergy undergo screening.

Nomogram is a widely used prediction tool that uses biologic and clinical variables to graphically depict a statistical prognostic model that generates a probability of a clinical event, such as cancer recurrence or death, for a given individual. It is a pictorial representation of a complex mathematical formula. Blood eosinophils, the CoMiSS (Cow's Milk-related Symptom Scores), and feeding habits have all recently been discovered to be linked to allergy diseases. Utilizing the benefits of nomograms, our study enrolled infants with feeding issues and malnutrition to diagnose food allergy based on OFC or SPT in conjunction with symptoms and sought to collect information on factors related to food allergy, such as blood eosinophils, CoMiSS, and feeding patterns, in order to develop a nomogram that could predict the risk of developing food allergy.

In our study, 86.2% of infants with feeding issues and malnutrition had a verified food allergy. Given the abundance of food supplies in Shanghai, one of China's most prosperous cities, newborn malnutrition is typically caused by feeding issues. Notably, the most common type of food allergy in babies is non-IgE mediated, which is characterized by non-specific symptoms such vomiting, regurgitation, nausea, diarrhea, unwillingness to eat with weight loss, bleeding, or urticaria and eczema. Aside from making diagnosis more difficult and affecting how nutrients are absorbed, unusual symptoms also permanently hinder growth and behavioral development. Food allergies are becoming increasingly common in babies and kids today, which suggest that feeding issues and malnutrition will become more serious and widespread. Food allergy has not received much attention up to this point in infants who are malnourished and have feeding issues. Evidently, it will be crucial to create a food allergy early detection programme for these infants.

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