Table 1. Summary of the most common clinical manifestations, the most frequently involved allergens and the prognosis of *de novo* food allergies after liver transplant.

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| **Authors** | **Number of children** | **Clinical manifestations of food allergy** | **Allergens** | **Outcome in terms of number (%) of food allergy outgrowth; follow up (mean)** |
| *Sinitkul R et al.* | 46(54% de novo FA; 39% confirmed FA) | 52% GI symptomsSkin clinical manifestations (angioedema, urticaria, eczema)AnaphylaxisAnaemiaRespiratory (stridor) | 49% IgE mediated29% Mixed 21% Non-IgE mediated | Cow’s milkShellfishEgg whiteWheatSoyPeanutCoconutFish2/3 multiple food allergies | 66%**3 years** |
| *Shoda T et al.\** | 106(14% de novo FA) | urticaria and angioedema (80%) GI signs and symptoms (50%) | Non-IgE-mediated gastrointestinal allergy was suspected in two patients | egg (50%) | n.i. |
| *Lee Y et al.* | 93(35 children=36% de novo FA; 28 children confirmed) | Not specified | 55% eosinophilia | Cow’s Milk Egg whiteSoyWheatpeanut | 69% **10 years** |
| *De Bruyne R et al.*  | 49(13 children=26;5% de novo FA) | 767% GI signs and symptoms (diarrhoea with faltering growth, blood in stools and vomiting)1/13 EoE46% cutaneous/systemic (angioedema, urticaria, anaphylaxis)severe atopic dermatitis23% treatment-resistant cheilitis with oral mucosal lesions | 3/13 (23%) IgE mediated8/13 (61%) mixed2/13 (15%) non IgE mediated | Cow’s milk Egg whitePeanutSoy7/13 multiple FA | 1/13 (7%)**72 months** |
| *Wisniewski J et al.* | 352(30 children= 8% de novo FA) | 12/30 urticaria and/or angioedema4/30 anaphylaxis11/30 GI symptoms (abdominal pain, bloody stools, vomiting and diarrhoea, failure to thrive, odynophagia)  | 5/10 lower endoscopies eosinophilic infiltrates | Cow’s milkHen eggPeanutSoyTree nutBeefFishSesameWheatCorn | 14/30 maintained food avoidance10/30 followed an unrestricted diet6/60 lost to FU**10 years** |
| *Oztürk H et al.* | 60(4 children = 6.6% de novo FA) | 2 (3%) eosinophilic gastroenteritis; EoE (Diarrhea)Atopic dermatitis; 2 (3%) food allergy (anaphylaxis) | Sesame oilCow’s milk | n.i. |
| *Maarof G et al.* | 7 children with de novo FA | 5/7 angioedema 2/7 Quincke oedema generalized urticaria or gastrointestinal signs and symptoms (diarrhoea). | (3/7) hazelnut;(3/7) peanut; (2/7) egg white (3/7) yolk; (2/7) lentil; (1/7) fish; (1/7) almond; (1/7) pistachio;(1/7) mustard; 4/7 two allergens3/7 three allergens | 7/7 (100%)**37 ± 27 months** after the immunosuppressive switch and diet restriction |
| *Levy Y et al.*  | 65 (4 children=6% de novo food allergy) | Urticaria AngioedemaStridor | FishEgg Sesame, Peanut, SoybeanMilk Apple3/4 multiple FA | 0**2-4 years** |
| *Atkins FM et al*. *Lykavieris P et al.*  | 121 children(12=10% de novo food allergy) | 12/12 Angioedema 2/12 Hoarseness 2/12 Shorten of breath1/12 Anaphylaxis9/12 Recurrent diarrhoea10/12 Peripheral blood eosinophilia | Egg (50%)Cow’s milk (33%)Peanut (33%)Soy (33%)Wheat (25%)Almond (17%)Lentil (17%)Fish (17%)Beef (8%)Chicken (8%)Hazelnut (8%)Lamb (8%)Kiwi (8%) | 8/12 Only in those on ED who switched from Tacrolimus to Cyclosporine**3.75 years** |
| *Lebel MJ et al.* | 154 children(12=8% de novo FA) | 6/12 (50%) Immediate GI hypersensitivity5/12 urticaria3/12 angioedema2/12 Eosinophilic enteropathy | Eosinophilia 77% under Tacrolimus)52% under cyclosporine | Cow’s milkEggsPeanutsNutsLentil BeefHorseLambFishLegumes5/12 Multiple FA | 2/9 (under tacrolimus)**5 and 8 years** |
| *Marcus N et al* | 111 children(17=15.3% de novo FA) | 3/111 (2.7%) anaphylactic shock8/111 (7.2%) Eosinophilic GI disease (diarrhoea, vomiting, failure to thrive)Pruritus, rash | Not specified | 97 PTAA (not only FA)11% followed conservatively71% conventional therapies for allergy or autoimmune disease18% change in immunosuppressive therapy (7/17 improvement of PTAA; 7/17 complete resolution of PTAA; 13/17 not affected)**>6 months** |
| *Mavroudi A et al.* | 3 children | 1 Mucoid bloody stools; eczema, eosinophilia 1 abdominal pain and discomfort and occasionally nausea and vomiting1 lip swelling, facial angioedema and hoarseness of voice | Cow’s milkSesame seeds,white fish and egg proteins | 8 years2 years 2 years  |
| Frischmeyer-GuerrerioPA et al | 25 children with FA after organ transplantation (23/25 liver transplant) | 15angioedema 15 urticaria 6 eczema 10 lower respiratory tract symptoms 3 upper respiratory tract symptoms 20 gastrointestinal symptoms 15/ 25 patients’ biopsy-confirmed eosinophilic GI disease, 14 persistent GI symptoms 12/ 15 patients with eosinophilic gastroenteropathy also had acute food reactions | Egg (19)milk (19), peanut (10), soy (9), wheat (9), ‘‘other’’ (14)**25 multiple FA (mean 4.5 foods)** | 3/25 (12%)**2.4 years (mean time in the clinic)****6.1 years (mean time by phone)**7/25 children were able to reintroduce at least 1 food at a median of **30.6 months** |
| *Noble C et al.* | 60 children(12=20% de novo FA) | 6/12 (50%) anaphylaxis4/12 (33%) EoE | 8 immediate2 delayed2 mixed | Eggswheatnutssoy Cow’s milkSeafood**9/12 multiple FA** | n.i. |
| *Ozbek OY et al. 2009* | 28 children(6=21% de novo FA) | 3/6 Eosinophilic GI disease5/6 Diarrhea,5/6 vomiting6/6 hypereosinophilia | 6/6 Cow’s milk 6/6 Egg5/6 Wheat1/6 Lentil1/6 Peach**6/6 multiple FA** | n.i.**25.4 months (mean time)** |
| *Ozbek OY et al. 2015* | 28 children | / | / | 4/6 (7-38 months)6 ED2 switches to cyclosporine (1/2 FA resolution)1 switch to sirolimus (1/1 FA resolution)3/6 continued Tacrolimus (2 complete recover1 partial recover) **5 years** |
| *Käppi T et al.* | 43 children (8=18% de novo FA) | 1 EoE1 anaphylaxis3 angioedema1 urticaria1 pruritus1 bronchial obstruction3 abdominal pain1 diarrhea | 6 immediate2 mixed/delayed | Cow’s milkBeansHazelnutsEgg, soy, wheat, peanuts,Date plum,Pistachio nuts,Fish**2/8 multiple FA** | n.i. |
| *Mori F et al.* | 12(7=58% de novo FA) | (3/7) Anaphylaxis, UrticariaOAS, Angio-oedema,Vomiting, abdominal pain, diarrhea, | Peanuts,Egg, Hazelnuts,Lentil, Wheat, Sole,Code,Soy, Cow’milk,Peach**5/7 multiple FA** | 3/6**10 years** |
| *Mitsui M et al.* | 206 children(42= 20.4% de novo FA) | 86.7% Urticaria/angioedema 63.3% GI symptoms  | 30 (71.4%) IgE mediated10 (23.8%) non IgE-mediated2 mixed  | EggCow’s milkFish,Soy,Wheat,Sesame,Peanuts,BuckwheatScallops **21/42 (50%) multiple FA** | n.i. |
| *Brown C et al.* | 50 children(12=24% de novo FA)  | Angioedema, vomiting,Eczema, pruritis,Urticaria,Enteropathy with eosinophilic colitis, | EggCow’s milk,Peanuts,Prawns,Soy,Sesame,Hazelnut,Cashew,Fish,Walnut,Mango**4/12 multiple FA** | n.i. |

\*Abstract

Legend:

n.i.= not investigated

FA= food allergy

GI= gastrointestinal

FU = follow up

EoE= eosinophilic oesophagitis

ED= elimination diet

PTAA= post-transplant allergy, autoimmunity, and immune-mediated disorders

OAS= Oral Allergy Syndrome