# An Uncommon Food-Induced Clinical Syndrome-Pediatric Grand Rounds-4-11-25-Meeting Recording

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57m 11s

**Kamat, Deepak M** started transcription

**Kamat, Deepak M** 0:03

Can take or whenever I'm done with my introduction.
OK.
Good morning and welcome to pediatric grand rounds.
We had to go to a lot of technical difficulties this morning, but finally I think we are on here.
Please.
Complete the evaluations after the presentation and we will posting the CME credits in the chat box.
The number for the CME credit is in the chat box frequently. Don't have to send me reminder.
It's my great pleasure to introduce this morning's grand Round speaker, doctor Milian Pansare.
Who? A good friend of mine. He's associate professor of Pediatrics at Central Michigan University.
And Children's Hospital of Michigan, he received his MBBS degree.
And then his did his MD in Pediatrics from Bombay University.
Now is the Mumbai University in India.
Then he moved to the US and did his pediatric residency at Hindi for hospital in Detroit and Fellowship in Allergy and Immunology at Children's Hospital of Michigan, subsequently served as the.
Associate Fellowship program director for Allergy Immunology Fellowship program and also medical director for asthma program at Children's Hospital in Michigan.
His clinical interests include asthma, anaphylaxis and Food and Drug allergy.
His clinical research projects include improving asthma outcomes in inner city, clean inner city children and anaphylaxis education in local schools, as well as improving access to rescue inhalers and EpiPen epinephrine auto injectors in inner City Schools at the national level. He's very active in numerous activities, including educ.

Scientific and advocacy activities for the American Academy of Allergy, Asthma, Immunology and the American College of Asthma.
Allergy and immunology Dr. Pansare, thank you very much for accepting our invitation.
The floor is yours.

**mp** 2:12
Oh, thank you.
Thank you Doctor Kamat for your kind introduction and giving me an opportunity to engage with your faculty today.
First of all, good morning everybody. And I'm wishing you a very happy Friday.
You know, today is a special Friday.
Today is April 11th, and guess what? Today is the international cheese fondue day.
You know what it means.
It means that we can go raid cheese factory, go to Mexico restaurants, American burger places.
And eat cheese to a heart's content and enjoy.
Isn't it a wonderful thing?
But imagine.
There imagine a world living in a world where even the most innocent food could trigger life threatening reactions.
And there are really many patients out there who cannot eat these innocent food because they develop a serious and a severe reactions.
This entity is not very uncommon.
We often would miss that if you have no knowledge about these entity so today.
My goal is to bring your attention to one of such clinical syndrome, which can potentially result in severe clinical reactions.
Nope, I'm not talking about anaphylaxis.
We know about anaphylaxis. I think we do a good job in taking care of patients with anaphylaxis.
But I'm talking about rarer entity.
Imagine patients living in the world having this disease syndrome, and we're living in a constant fear. Anxiety worried about when the next reaction could occur.
I'm not making it up.
It is real.

This disease was not discovered until very recently in 70s and 80s and 90s. Many of these patients were not diagnosed.
Appropriately, when they went to see a doctor would often say that who would often give them an advice which was inconsistent with a clinical symptomatology.
Often they were told. I don't think food is responsible for this.
I've never seen this problem in my life.
And when asking for a specific advice, there were nothing to offer.
So this patient lived in a continuous sense of despair and with a sense of abandonment.
Certainly this is a significant psychological impact when you have a uncommon clinical syndrome like this.
And today my job is to bring your attention to this uncommon food induced clinical syndrome.
For many of you, this may be a totally a new entity, but for few of you you might have seen this patient in your clinical practice.
I certainly would like to know what was your clinical experience and for presumably many who have not seen one as yet. My goal is to provide you a clinical update on this clinical syndrome.
Let me illustrate this case.
Let me illustrate this point by giving a clinical case scenario.
Assignment all infant was admitted to PICU following an acute illness.
The infant presented with lethargy, certain onset of severe MSS, and later one large watery diarrhea infant was clinically well when dropped to the daycare in the morning.
He also fared well in a Similac infant formula two hours prior when he was brought to the ER.
He's obviously a sick looking infant. Ashen colored skin lethargic, severe dehydration.
In hypertensive and incidentally, was.
Initial lab showed a significant neutrophilia metabolic acidosis, meth hemoglobinemia.
Otherwise, the pertinent clinical history was unremarkable.
The child was a healthy infant growing well, exclusively breastfed, was diagnosed with cow milk.
Allergy due to his previous embryosis episodes.
What was the clinical course? The child was admitted to?

Picu treated for hyperbolemic shock and possible sepsis.
The sepsis workup came back normal, including a CSF in the normal range.
The infant made a dramatic recovery within 24 hours of presentation.
So what?
You're likely diagnosis.
Is it a case of acute gastroenteritis with severe dehydration?
Unlikely because the clinical symptoms were very short lasting.
Did not, and the patient made a very rapid recovery.
Did not have any fever. Other signs of infection.
Acute sepsis.
Yes, it was a very dramatic presentation, but again, equally dramatic recovery. And with cultures being negative again was less likely diagnosis.
Is it a case of cow's milk anaphylaxis?
Certainly not because the presentation, or at least 2-3 hours after his last feed, and he did not have any other system involvement.
So typically anaphylaxis would be a multi system involvement.
Cutaneous respiratory GI and so on so forth.
But he didn't have any of those.
Is it a case of food poisoning?
Food poisoning is quite uncommon in this particular age group. When a child was just infant feed, infant feed formulas.
Again, the recovery.
Again, is quite dramatic.
Usually food poisoning will not have such a dramatic presentation.
Then what is it?

**Williams, Janet F (Dr.)** 8:09
Peft pies.

M

**mp** 8:11
Yes, indeed, you're taking the meat out of my my talk today.
This child is a case of fbis, a foot protein, enterocollitis.
This child was not labeled, so when he was discharged from the initial hospital.
He later on was readmitted around 12 to 13 months of age to our institute, again with a very similar dramatic presentation.

He was resuscitated by the EMS, actually interpreted on site.
Concern of seizure and brought to the PICU he you know, he was he's doing the route is due but every two come out he was remained extubated was treated aggressive with IV fluids and IV fluid resuscitation. He made a remarkable recovery within 24 hours again and then.
He is presumptive. Diagnosis was severe. Acute gastroenteritis with hyperbolemia with possible sepsis.
And then we were consulted for this patient because of Mother's concern, a possible cow milk allergy. She had stopped giving him in cow's milk, and she stopped breastfeeding.
He was only on solids, meaning food, and was surprisingly doing well.
He had no exposure to milk and dairy until that accidental exposure, where the grandfather was babysitting. The child gave him a milk formula because mother was away at work.
So these patients, the clinical hallmark of these patients are they present with a very dramatic clinical symptoms and also make a dramatic recovery. But if you're not aware of such entity, you're not likely to come up with this diagnosis.
So what is F Pais?
F Pais is a food.
Protein induced enterocolitis is a non IG E mediated food allergy characterized by delayed gastrointestinal symptoms.
Following ingestion of culprit food, the hallmark is is pronounced GI symptoms.
And the symptomatology may manifest little late than usual, usually two to four hours or longer.
As a result, the Co relationship with that particular cult prefood is often.
Missed, but FIS is the story of missed or delayed diagnosis.
Most of these patient have at least five or ten episodes before they are properly diagnosed.
Otherwise they are just investigated for other unlikely ideology diagnosis.
There's a definitely a low awareness amongst the primary care provider.
A recent survey which looked at the 2100 outpatients with F Pis when they did a retrospective analysis.
How many of these patients had this diagnosis labeled prior to their referral?
Only 22% had proper labelling of the diagnosis.
Unfortunately, Fpi's there's no diagnostic test available, so it always is clinical

diagnosis.
Many of these patients often have unnecessary diagnosis.
Invasive testing, particularly endoscopies, which is probably not necessary if you make this diagnosis early during the.
Disease. You also have to remember F Pais is not necessarily a benign condition.
The usual course is a spontaneous recovery with time, but 20% of patients like this patient end up with severe hypervolomic shock.
Recent rare cardiac arrest have also been reported both in infants and older children.
And this is a diagnosis is with evolving your understanding of this disease is changing and evolving.
We really have need to learn more about this disease to do a better job in clinical management.
So how recent is this diagnosis?
The first documented case likely of FIS was published by two Gentlemen, Grabowski and Powell in 1970.
It was a case of infant with cow milk F pies.
The diagnosis was not labeled ASIFICE, but thought to be a milk intolerance or a probably a milk induced colitis due to recurrent episodes of dramatic symptoms. An improvement after cow milk was withdrawn.
From the child's diet in 1970s, the disease was thought to be exceedingly rare and very and rarely reported.
However, over a period of time, there was sporadic increasing report of F Pise.
Surprisingly to now not cow milk, but variety of solid food, including like rice.
Chicken green peas.
More reports where published for older children.
So no longer.
It was necessarily a disease of infants in 2012, a first documented case of scallop induced F PY was reported in adult with proven with a oral challenge.
Recently, most of the food associated with F pies are thought to be innocent.
Food, not the big aid, which caused severe allergic reactions, but recently in 2020's new the new kid in the block.
Peanut and egg have been increasingly reported as a cause of F pies.
We do not know a reason for this, but perhaps.
The new recent recommendation of infant food feeding guidelines, which recommend early introduction of even highly allergenic food, including peanut in in

young infants between 4:00 to six months of age to prevent a development of food allergy.
So early introduction of food.
You develop tolerance to food allergy.
But do you create a new problem?
Are you going to see more fbiice in this patient that needs to be elaborated properly?
So what?
The landscape of FPIS have changed from 1970s.
Now we know probably any food can cause F buys.
The common ones are serial grains, vegetable most commonly sweet potato, carrot, fruits and fruits like banana, avocado.
Apple or other solid food, typically in older children, including seafood, peanut nut and eggs.
What has changed in the literature? If you look at the curve of publication in a period of journal, nothing was known until almost 2000, 2010.
It's only the past decade or so there has been surge of scientific publication in peer reviewed journal.
Most of these article are emphasizing on the clinical.
Elements. What is the epidemiology?
Epidemiological aspects of F pies the clinical profile of patients, and many of them also looked at longitudinal data about what is the outcome of patients with F pies.
None of them have touched on pathophysiology. FF, biis.
I did talk to you about what is the quality of life style for patients, a parent or caregiver with F pies and as a result.
Of ignorant.
Being ignored by the medical fraternity, the the caregivers establish an organization called FBI's organization.
It's established in United States, but now it has a worldwide membership.
International Fbiice is a non profit organization which is dedicated time for patient advocacy and research funding with the purpose of increasing.
Dissemination of knowledge about FBI.
And educating caregivers and providing the support they need to take care of children with F buys. It's only until 2016.
There's an IC Dec code for F Pais established.

Thus the disease got a name, it got a.
It got an established diagnosis and now even for research purposes we could look back, do a retrospective analysis using this coding for F pies.
There were various diagnostic criteria proposed by different researchers creating a lot of confusion.
What is the right criteria for diagnosis of F Pais?
Particularly so because F π is a very is a clinical condition.
So all the experts came together and they published the consensus guideline in 2017 for diagnosis and clinical management of F Pais, which is the first scientific publication really facilitating clinical care of F5.
It's only until 20/22 of first NIH grand was offered to the Boston Children Hospital group to to study the pathology of F Pais.
In 2023, the Consortium for Food Allergy, which is an organization heavily involved in research in food allergy, now also included F pies under the umbrella for further investigation.
So the future looks promising.
Because there is more involvement of scientific community now to understand the disease of F pies and help with clinical management.
For our patients.
A recent publication.
Of by the Niid Group, A workshop report of FBI's was published in 2025 February, stating the current status and future direction in management of FBI's.
So what is a prevalence of F pies in United States?
It is estimated 0.51% of the pediatric population may have a diagnosis F pies. That means there are about 375,000 children.
Running around somewhere waiting to come to your office with this clinical symptomatology and hopefully we should not miss this patient with an erroneous diagnosis.
There are about prevalence in adult population is about 0.22% estimated 550,000 of adult with F pies.
So it it reasonably not an uncommon disease.
FBI is prevalent worldwide. There's a significant.
Variation in prevalence. More importantly, the food which triggers F Pi symptoms.
For example, F pies with soy is almost not reported outside the United States. In Japan, egg is the most common food trigger in Mediterranean climate. Like Spain,

Italy, seafood is the most common culprit in Australia C.
Greens is a common culprit, so there is a variation.
There is a international.
Drive for learning about this disease.
Entity and the International Fi organization helps coordinate this research work.
The impact of FBI's are significant.
It can cause a severe effect on the growth of a child, largely due to eating disorder or chain Mig develop because of delay in introduction of solid food, also avoiding nutrient dense food can result in nutrent insufficiency causing growth for alteration.
So you have to remember this impact of F pies in development of a infant.
The most important effect we talked about is.
Quality of life there is significant impairment in the mental health of a caregiver.
Increase occurrence of anxiety, stress, poor quality of life.
And.
Decrease self efficacy in taking care of.
Patients with children, with deft bias, of course.
Creates a lot of financial burden because often the parent have to lose their job, stay home to take care of the child and look for alternate, more expensive types of formulas or diet.
Causing significant financial burden.
In fact, a recent study showed that the quality of health, quality of life, of caregivers of children with F pies have much worse quality measure compared to caregivers of children with food allergy.
In all domain and also in specific domain of measure of quality of life.
So therefore it's a silent disease causing problems which need to be recognized and that also should be a part of our care to make sure the mental well-being of the caregiver is taken care of.
How do you diagnose fpice paral with the first person who associated the foot trigger causing F π? So if you give the culprit food you have symptoms. You remove the food. Your symptoms are improved and at a later time if you reintroduce the food, the symptoms re occur.
There are numerous other diagnostic criteria established by various authors.
In 2017, the international consistent guideline published the 1st.
Consensus criteria for diagnosis FIS.
So this criteria essentially was clinical and that's important because F Pais is a clinical

diagnosis.
You need appropriate clinical.
Criterias to make this diagnosis.
The the guidelines recommended for diagnosis of F Pais you need to have two major criterion and at least three of the minor criteria.
The two criterion are occurrence of symptoms.
Delayed GI symptoms within one to four hours after ingestion of suspect food. Most importantly, it is not an anaphylaxis.
It's not an IG mediated, so there should not be any evidence of a Ige mediated reaction like hives, angioedema, cough, throat, chloral symptoms.
And other significant systemic symptoms.
The minor criteria are much more fulfilling for a severe manifestation, like if you have a presentation of hypertension.
Hypothermia. A patient need to be seen in emergency room requires IV fluids or has extreme lethargy and pallor.
The diagnosis becomes pretty easy if you know about the disease entity. If you have another episode in the past, then your suspicion is significantly increased.
Or if the patient has another food trigger for F Pi symptoms the diagnosis might be easier.
This diagnosis criteria work very well for π.
I had my reservation patient with milder form of F pies might be missing.
Will not be diagnosed by using this criteria and there is a spectrum of patient with milder phenotype. The most important thing is the patient. Apart from this, acute illnesses are normal and well growing infants without any other problem as long as the offending food agent is avoided.
There's also an entity called Chronic F Pais.
This is little wishy washy.
There's no clarity clarity on this.
Largely, it states that the symptoms are long lasting.
It could manifest as a severe presentation with the offending agent is not avoided and ingested on a regular basis.
A child may have a persistent and a progressive vomiting and a diarrhea, often with blood, sometimes with dehydration and metabolic acidosis. A milder version of this chronic F pise may have intermittent episodes of omitting and diaria.
The most important thing is patient with chronic FIS will definitely have poor weight

gain, feel it to thrive.
Even without dehydration and metabolic acidosis.
So that's a marker. If you're dealing with a patient with chronic fiber, but I believe many of these patients will be worked up more for malabsorption or a chronic gastrointestinal disease before we might think about chronic fibros. Other important criteria is even after you withdraw the incriminating.
Food agent the recovery is not rapid.
It may take three or ten longer days for the for the recovery to occur.
Many of these patients with chronic FIS properly diagnose, and if you reintroduce that culprit food, they can manifest as an acute F pies.
So the phenotype might change after avoidance of food for a long period of time.
Chronic fib. Some of the important highlights are is almost never seen outside the Infancy age group.
It has not been reported with solid food exclusively.
It's related to cows, milk and soy, so that at least.
Less concerning feature, at least we would be able to diagnose fpis in young infants.
But the common story is there's often a delay in diagnosis, resulting in a prolonged and progressive course until a food is eliminated.
So the guidelines have tried to establish a clinical profile based on the symptomatology to identify.
Are there any particular phenotypes in the clinical observation of all the cases when they reviewed the literature and looked at all the case reports in the case series and the case cohort studies, they wanted to find out a pattern.
Is there a certain clinical characteristic which?
You have. Does it affect the clinical outcome and the course of the disease?
So that's called phenotype.
Any observable clinical features which can be identifiable and can be correlated to the Indo type or the pathology of so broadly they propose 4 different phenotypes for F π's one depending on the age of onset.
So there's a different outcome for patients who present early the nine months of age compared to nine months of age, more than nine months of age.
Definitely the older children and adults have a different profile.
And outcome in terms of their FBI disease.
Other phenotype was based on the severity. Like a lot of these patients we present with a very severe presentation like the one I presented or could be a milder version.

Based upon like we talked about acute versus chronic fibs, there's another entity observed in this phenotype evaluation. Patients had IG E positivity.
That means the skin prick test or the serum IG test for the food was positive.
This was called as a atypical F π's, so about 5 to 30% of the patient FI scan have a positive IG E test.
What it showed that these patients with atypical F Pis generally.
Had a protracted, sometimes unresolved course that means the disease symptoms really lasted for longer period of time, and not surprisingly, about 25% of patients developed true type one or IG mediated allergic reactions.
So is this indeed a separate profile or, as we have learned, over a period of time?
Not only the prevalence of F Pis has increased.
But also the IGE mediated diseases like allergic rhinitis, atopic dermatitis, allergic asthma.
So is this a cause effect or this is just a two entities being observed together is not known?
So typical phenotype of a infant F pies would be infant with cow milk, and soy is likely to present before 6 month of age. If they present earlier than that, they are likely to have more of lower GI.
Symptoms like diarrhea, including blood in the stool and likely to have failure to thrive.
Most of the FPI food symptoms occur with a direct feed, meaning you the child has to eat the food to develop symptoms, and typically would occur in the initial introduction. Most studies show that.
Manifestation of π have occurred within the 1st 4:00 to 8:00 initial feeds.
So that's a little comforting. If a child has been eating food at least 10 or 12 times or more, it's less likely to develop F pies.
A solid F pies manifest little later in infancy between 6:00 to 12:00 months of age, with a mean of five to seven months. Most solid F π is.
The common food is serial grains, rice and oat is the most common in United States.
Other solid F pies are fish, egg and poultry.
Usually chicken is considered to be low allergenic food, but chicken.
FBI is a much more commoner than other poultry.
FBI is an older child and matter increasing reports of fires in older age group.
Most present with acute fires.
A chronic fires almost not known in older child or adult.

They typically manifest with symptoms with predominant abdominal cramps or pain.
That's a very common symptomatology.
Nausea and vomiting is also accompanying these symptoms so often.
This older children are will be misdiagnosed.
Sometimes you would think it's a foot poisoning or.
Food intolerance and may not pay attention that it this is indeed could be an FBI. The key observation with findings was is more common in female population.
Again, same old story.
Misdiagnosis until the patient had anywhere from 6 to 15 episodes.
Definitely is much more persistent.
Many very few are likely to develop tolerance over time.
Incidentally, there was higher rates of comorbid GI conditions like irritable bowel syndrome or celiac disease in this patient population. The most common foot trigger is shellfish, mollusc or fish.
So seafood are the most common.
And followed by egg and also mushroom.
Many of these patients might be misdiagnosed as mushroom toxicity or poisoning, so be mindful of that.
So what are the foot triggers for F pies?
Virtually any food is possible trigger.
It varies with the geographical variation and the dietary habits of that area.
Most common are the single food F pies amounting average around 60% of the patient population.
However, the single food fi is not so common in the United States. Usually two food a cow milk or a soy with oat or a rice seems to be the most common combination in United States.
Some of the patient, almost 10% of the patient can have multiple food F pies ranging from 2 to 13.
Food, bad situation.
We do not understand the risk factor for multiple food F buys a small study of Australian infant showed that if the infant had a reaction very early age, or if they have F pies to fruit and vegetable and rice more likely to develop multiple other food FP.
So just to recapatulate, I mean acute FBI's in United State.
The common triggers are cow's milk, soy grains including rice and oat egg, fruit and

vegetables.
In Europe, it's cow's milk, fish, egg grain, soy.
In Australia, rice cow's milk, egg, whiten poultry, chronic F pies, just infant formulas.
That's it.
Interestingly, many Food Co association have been noted in children with deaf POIS, for example.
If you have Carmelo Pies almost 40% chance you'll also react to soy.
So that's not a good substitute when you have a cow's milk F pies. The problem was alternates are either a hydrolyze, extremely hydrolyzed formulas, or amino acid base formula for infants. If you have solid food F pies, there's almost a 45% chance you may have.
Another solid food FIS is the observation.
These are earlier studies, so I'm sure this Co association.
Maybe different with time.
With, as we know about more.
Study on this aspect if you're if you have F pies to grain, more likely react to another grain is up to 50%.
Similarly for poultry.
Almost 40%. So if you have F pies to chicken, Turkey, quail and whatnot would not be a good alternate.
What about FBI is in a breast fed infant, so there will limited data, but clearly it's very very uncommon.
In fact, the European Academy of Allergy and Immunology and our American Academy of Allergy, Asthma and Immunology have put out a position statement stating that.
It's uncommon to see FBI is an exclusively breast fed infants.
There is no need to recommend any maternal allergen avoidance in asymptomatic infant. Rarely an exclusion in maternal diet might be effective, but generally not recommended. So be careful when you're seeing a patient and your suspicion is F Pais is not likely because of the breastfeeding it could be.
Some other agent which you have not recognized.
What is F π's pathology?
What do we know of all?
All I can say, we really don't know anything about it.
I could just say that and move to the next slide, but I'm just going to recapitulate a

few things which is thought to be a probably a proposed mechanism. It clearly, clearly an interaction between the immune system.
The GI tract and autonomic nervous system, although we do not know the exact details, it is a presumptively it is thought that.
There is some disruption intentional barrier which causes leak of the protein activation of local immune system.
There's a big role for Neuroimmune system there, which triggers.
Signaling of the vagal nerve triggering the vomiting center in the brain. If your a lot of vomiting and diarrhea, you're hypervolemia that activates the autonomic nervous system to maintain the homeostasis.
So we really don't understand very well.
There is no evidence of any systemic inflammatory changes. For example, in patients with food allergies, you can identify IG E in the blood, or you can find some T cell clones specific to that food antigen as an evidence of food allergies.
But none of that is evident in the blood of these patients, so the best explanation is there is some local inflammatory process, probably innate immunity plays an important role.
Including monocytes, macrophages and neutrophil, the stress.
Causes release of cortisol causing increase margination of neutrophil in the blood and that's what you see as neutrophilic Leukocytosis.
There is a significant proliferation lymphocytes, but it's a pan TCL P pan T cell activation, meaning there's not one type of T cell.
It could be TH1TH2TH17TH22 which are all involved in inflammatory responses in the in the gut.
Perhaps the role of mast cell also, but what has been shown that serotonin probably plays an important role in clinical manifestation of F Pais serotinin is a mediator released by a specialized cells in the intestinal epithelium called entero endocrine cells.
The receptors for serotonin is a 5HT3 receptor, which is expressed in multiple cells.
Including lymphocytes, macrophage immune cells, intestinal epithelial cells, which are important for fluid, and ion exchange across the epithelium.
On the efferent nerves or spinal cord vagus nerve, which are important mediator of vomiting sensation. So serotonin has a role in GI motility.
GI mean menisi GI gut.
Cut secretions.

Gut motility. Perception of nausea, vomiting and abdominal pain.
I'm saying so because there is one drug which is now used to treat F π's acute symptom, called ondansetron, which had been used for longest time to treat vomiting with chemotherapy or even gastroenteritis.
But this drug have been used for F Pais and in acute F Pi symptoms seem to dramatically resolve.
With use of onderson.
On Wednesday, on so, perhaps because it's a receptor antagonist.
So probably there's a big role for serotonin which needs to be looked at carefully in, in, in Physiology of how do you diagnose fpis? There are no laboratory markers.
There are no lab tests to confirm fpis.
It's essentially a clinical diagnosis, but you could probably do what is called an oral food challenge.
Which typically is done by allergist.
In their office, it is a medical procedure in which food is eaten slowly in a gradually increasing amount.
Under medical supervision to accurately diagnose or rule out a true food allergies.
So we commonly do this for our patient with IGE mediated food allergies.
It's very challenging.
It's very difficult.
It's very resourceful when it comes to doing oral food challenges.
For F pies, it is fraught with risk.
It requires hospitalization and an IV fluid access to an IV fluid. Access. All of that makes it a very problematic procedure.
So it's not commonly done.
You'll have very few centers who actually perform oral food challenges for fpis.
Many of them are research centre. Do we really need to do oral food challenges for patients if the diagnosis is very compelling, you really don't need to.
But there is utility of oral food challenge.
Particularly when the history is unclear and when you're considering to introduce new food, a lot of these patients are caregivers.
Extremely anxious. They're worried about introducing any new food in spite of reassurances.
So perhaps they would want oral food challenge before you can introduce a new food.

Obviously it's very important to determine whether the disease resolution has occurred.
So these are the two areas where there's a big role for overall food challenges.
Obviously you have to sit down and discuss with the.
Patient and caregiver. It's always going to be a shared decision because the risk involved in performing an F Pais. There is no established accepted protocol.
This is an example of oral food challenge.
Obviously it's only done under supervision of an NMD with an IV access. You need to continuously monitor the vital signs.
The initial step includes administration of.
Protein in a quantity of 0.06 to 0.6 kilogram.
Of the body weight in a three equal doses.
You should not exceed more than exceed more than 3 grams of total protein because of fear of severe reactions.
You have to wait at least for two to three hours and then then second step would be administer age appropriate serving of that particular food and then monitor for further six hours.
So invariably you need to hospitalize this patient for observation. More than 50% of patients will get a serious severe reaction.
If the challenge is positive, requiring IV fluids and multiple medications, so bottom line, orafood challenges are not easy to do, not easily performed.
Not many people are doing it, but always a consideration when the when the need is appropriate.
What are the management F? Pies include essentially a management of acute symptoms. Depending upon the severity.
IV. Fluid resuscitation and administration of ondansetron has has significantly improved outcome of patient with during the acute manifestation just like epinephrine is necessary for anaphylaxis on ancestral is necessary when your clinical suspicion is acute F pies.
You should be observing this patient, at least for six hours.
After the last clinical reaction before being sent home.
And they should have a normal clinical symptomatology before you would send this patient so.
We talked about on this interon is only recommended for infants more than six month of age.

There is no data safety data for younger infants.
It can be administered orally at home.
IV. Intramuscular it.
Although it's a very promising drug, it's poorly studied in this patient population.
You have to be mindful of cardiac disease, particularly if they're prolonged QTC interval arithmetic.
Wonder syndrome have been have been shown. Also patients who are taking certain drug which can prolong QTC including variety of antifungal macro antibiotics should be a consideration.
All patients with F π should get a home action plan, just like we have ASM action plan anaflex's action Plan F Paice patient should also get a plan to take care of reactions at home. Particular patient with a severe previous reaction activating EMS services.
Is important and early, even though they might have given oral on this interon to curb the symptoms.
Most patient, moderate symptoms should go to ER patients with mild symptoms.
That means one or two episodes of vomiting, no lethargy, and in the past had recovered at home, probably could stay home and continue with oral vigorous oral rehydration.
What are the long term management of piis?
Essentially, avoid, avoid, avoid primary trigger. Food elimination is the.
Sense of treatment of FBI because you don't want to keep provoking this clinical reaction. Continued reassurance. Monitoring for growth and development.
You can need to seek advisor for nutritionist to provide a proper complementary diet for for the infants enrolling in a peer group. Support services like the International FPI organization is a great idea for patients with FIS.
All these patients should be periodically evaluated for Ige sensitization or for consideration of oral challenges.
There is some empiric guidelines not based upon solid evidence, but on expert opinion which recommend how you can introduce variety of variety of weaning food in young infants.
You need to select low risk food like vegetables, fruits like blueberries, strawberries or meat like lamb or cereals like quinoa or other millets, tree nuts and sea seed.
But there seem to be more tolerant, impatient with FBI's at particular appropriate age group.

The guidelines recommend that any new food introduced should be given over a period of five to 10 days.
So an example of a new food introduction could be start with 1/4 teaspoonful at 9:00 AM repeat. After six hours you need to wait for six hours because that's a time period of clinical manifestation of F pies and the next would be 6 hours later of double.
The size keep doubling the size in consequent days until the child is able to eat.
Appropriate portion.
The Natural History of pyres is in 60 to 70% of patients will have resolution of the symptoms spontaneously.
We do not have a good data about solid F pies.
Atypical F pies do not resolve timely, so there are numerous. Clinical retrospective studies looked at time period of resolution of clinical symptoms with specific food, for example Cobe et al. Reported that patients with calm milk allergies.
About 5.1 at a resolution.
Sorry patiently compec allergy had complete resolution by five years of age, so I 6.7 rise, 4.7 and so on so forth.
So there's a different population. The outcome had been different, but it is expected.
Most patients classic FIS would make a recovery with time.
Of course, when we know some things we don't do not know a lot of things.
And there long list of things we really don't know, which is a problem.
Because these are the various unmet needs, a patient with F Pis be it for identifying the phenotype, know that knowing the triggers knowing, knowing the diagnosis and proper management, and understanding the psychosocial impact of patient for for the caregivers.
So essentially to just summarize, I want you to be alert and be able to diagnose patient with F Pais.
Particularly, patients who present with medical emergencies.
It is always a challenge going to be a challenge.
To diagnose patient with chronic F poise, there is no diagnostic laboratory test you could do.
It has to be a high index of clinical suspicion to make a successful diagnosis of clinically F buys.
It is important that you recognize this entity early in the child's life to improve the long term outcome and to get appropriate recommendations, you need to seek help of nutritionist and support.

Organization to improve the comprehensive well-being.
Of the caretaker and the child, these patients need to be monitored periodically for consideration of oral food challenges.
It's an evolving science.
We'll have more information with time with better criterias and recommendations for clinical management of F Pais.
With this, I'm going to end and I will be happy to take any questions.
I appreciate your attention if anybody wants to send me questions.
As an afterthought, I put out my e-mail here.
Imprintsareadmc.org.
I'll be happy to respond.
So how many of you have seen patient with FBI and what was your clinical experience?

**Kamat, Deepak M** 46:53
Hang it up.

**mp** 46:57
Can somebody chime in on that? And of course, I'm ready for any questions, if any.

**Kamat, Deepak M** 47:03
Thank you, Doctor Pansare, for that introducing us to the new concepts of F Pais.
Let's see if anybody has any questions, comments. They can either put them in the chat box or they can ask you directly.

**Williams, Janet F (Dr.)** 47:19
I have a question or a comment.

**mp** 47:21
Yes.

**Williams, Janet F (Dr.)** 47:24
I actually have experience, not.
I mean with someone having F pies, which is why you described it perfectly in the opening case.

I was like, OK, that's it.
And but I'm thinking that if it's not milk or something that is could need to be part of your life often.

**Brooks, Edward G** 47:43
Hello.

**Williams, Janet F (Dr.)** 47:49
What?
Most people would do is avoid the trigger and and they wouldn't feel that it would be important to re challenge themselves 'cause they could just avoid the food, the food that I had experience with patient in with sweet potatoes. And so they are successfully able to avoid sweet.
Potatoes and I don't think they feel like going through that vomiting.
Bloody diarrhea.
Kind of shock, like experience and so they can do that. But I think it it really then is a comment on you don't really know how often this occurs or resolves because there are a certain number of people that you know are out there and you just they.
Just not going to rechallenge themselves.

M

**mp** 48:39
You're absolutely right.
That's a very judicious comment.
Exactly. That's what happens in real life patients, particularly if they have seen a Doctor Who could not establish his diagnosis if there's no name tag given to it, they are always confused and they know this food has been causing a problem.
Why should I be rexposing my child to go through all that trouble? So they would just continue to avoid that. And until they meet a person who could reassure them, you know, things change with time, maybe we can reconsider.
It is a. It's a matter of.
Gaining the confidence and talking to them explain to explaining to them what usual outcome is with whatever little we know, perhaps would change their mindset.
But there's no way any parent is going to just say I know I want to try this again because they know you like it or not, doc.

**Williams, Janet F (Dr.)** 49:18
Yeah.

**Brooks, Edward G** 49:20
Oh.

**Williams, Janet F (Dr.)** 49:21
Right, yeah.

**mp** 49:24
I'm not going to listen to you.
This is my experience.

**Williams, Janet F (Dr.)** 49:25
Right.

**mp** 49:26
You tell me. Whatever. I'm not going to do that.
And this is exactly what happened to us.
We have some certain patients I don't.
I may have four or five patients only.
In my practice and two of them, I wanted to do a challenge.
But this is a doc. I don't know how to do it now.
Maybe that when the child is older, it's it's another way of telling me I'm not interested. You know, they don't want to tell me.
No, I don't want to do it, but I totally understand that you know. So there is a role of oral food challenge for such patients, you know, but whether they are going to whether they will be willing to do it because oral food challenge is a supervised test. It's a medical sort of a medical procedure, so at least that benefit they will have rather than, you know, go eat at home, which they never would do.

**Williams, Janet F (Dr.)** 50:08
Sure.

**mp** 50:09
So yes, but we have to keep talking about this reassuring a patient know that this is a this is what you have. This is what is expected to happen in spite of our limited knowledge.
But you know that might change their mindset, and perhaps you know, they might be willing to do re exposures.


**Williams, Janet F (Dr.)** 50:25
And thank you. Excellent talk.


**Kamat, Deepak M** 50:25
So.
Thank you.
There is AI will come back to you, Doctor Brooks.
But there is a a question in the chat box.
What are stool Cal protecting and stool A1 anti diet pin levels?
In stool during the episode of.
FIS.

**mp** 50:50
There's a limited information in there at all, so these are like acute phase reactant in the blood. People have noticed with inflammation in the gut, certain markers are released, but no, nobody has looked at particularly using those two proteins to look into the stool at the most people.
Have looked at stool, eosinophils, leukocytes and whatnot, but F Pais, when nobody has done biopsies for patient with F π's, obviously.
You're not likely to do it because it's such an acute manifestation and dramatic recovery.
You are not likely to do any endoscopy and biopsy for this patient.
Maybe for chronic FIS because you want to rule out other gastrointestinal disease.
So we really don't have a data whatever few times people have done endoscopy, all they have found was non specific changes, some sort of damage to the Li.
But nothing observable observable observable.
So also, there's no evidence bottom line of looking at these two items as a

inflammatory markers in F Pais with their fpis is an inflammatory disease.
We don't know, but once we learn like, like I said, there was a recently NIH grant.
In trying to investigate the pathology of F pies, perhaps once we know better, people will start looking at different markers for F Pais.
But that's an excellent thought.
I mean that's that's a very.
Astute observation.
And is there a role for such stool studies?

**Kamat, Deepak M** 52:24
Thank you, Doctor Pansare.
Doctor Brooks, go ahead, ask your question or make a comment.

**Brooks, Edward G** 52:32
I just want to thank thank you for excellent description. I was first introduced to this disease when I was a fellow in allergy immunology some years ago and the child was worked up for bloody gastroenteritis by a gastroenterology. We finally determined did have a milk allergy resolved and.
Back then, we called it allergic gastroenteritis.
And I took it upon myself after he was a year or two to do an oral.
Challenge and he had exactly what you describe.
He had a massive, bloody diarrhea about an hour or two after the challenge and became pale and hypotensive and lethargic.
So I I'll never forget this disease.
So thank you so much.

M

**mp** 53:18
I can.
I can guarantee you're not going to forget because you see this once.
You gonna remember it lifetime and you really want to. You know, you will feel more curious about this disease because really it's unfortunate that these patients out there without any labeling and they do not under because they're not labeled and they're not told what can potentially happen which.
Is a very risky proposition, but I appreciate your.
Insight.

**Kamat, Deepak M** 53:46
Any other questions, comments for Doctor Pansare?
So Milan, you said that about 25% of the patients have IG E elevated or specific to particular food?

**mp** 54:01
Yes. So ID for the specific food which triggers the symptoms.

**Kamat, Deepak M** 54:03
So so.
So and are they still considered part of app buys?

**mp** 54:10
So yes.

**Kamat, Deepak M** 54:11
It's not type 1.
Reaction.

**mp** 54:15
No. So what have been shown in epidemiological studies, this patient had a positive test. So positive test means they're sensitized. That means they do not have clinical symptomatology, but many such patients do develop actual type 1 reactions with time.

**Kamat, Deepak M** 54:24
Yeah.

**mp** 54:33
So that's why we as analogist, if I'm going to do oral food challenge or so for F Pais, I will do.
An.
Skin prick test or I serum IG testing for the particular food.
Because there's a risk of clinical reaction for these patients with time too. So we do

not know really how often this translates into true clinical reaction. But certainly we are learning, there's increasing risk for these patients particularly who have atypical or IG positive phenotype in a time will.

**Kamat, Deepak M** 55:06
Thank you.

**mp** 55:06
Tell us more studies will tell us what actually happens to this patient. It is a yes.
It is not thought about, but there's a risk for this patient who are categorized as atypical F Pais.
And like I said before, like we do not know, this is really a special phenotype. Or is it because they also have comorbidities, etopic diseases that are there, atopic dermatitis, allergic rhinitis and we know that a lot of patients with atopic dermatitis will have a false positive test.

**Kamat, Deepak M** 55:16
OK.
Thank you.

**mp** 55:32
Because that's what the nature of the disease is.
So many patients with eczema, if we do see them, IG testing whatever you test for will come out as positive.

**Kamat, Deepak M** 55:39
Yeah.

**mp** 55:41
It's because they have such a high IG level that they nonspecifically bind.

**Kamat, Deepak M** 55:42
Yep.

**mp** 55:46

To food antigens in your lab testing.
So is this just a false positive test or are these patients really going to have a disease?
Or how many of them really end up with clinical symptoms? Is a really important?
Information to find out.
But yes, there's a potential risk.

**Kamat, Deepak M** 56:02
OK.
Thank you, Doctor Brooks. Do you have more questions, comments.

**Brooks, Edward G** 56:10
No, sorry. I just left my hand up.

**Kamat, Deepak M** 56:11
OK.
Sorry, anybody else has any questions, comments for Doctor Pansare?

**mp** 56:25
I really appreciate your attention and I'm really sorry for the glitch.
The technological glitch we had.

**Kamat, Deepak M** 56:28
Yeah, that's OK.

**mp** 56:31
Unfortunately, I'm unable to see any one of you.
It's just my screen, but I'm glad you were able to communicate.

**Kamat, Deepak M** 56:38
Thank.

**mp** 56:39
Virtually.

**Kamat, Deepak M** 56:41
Thank you, Doctor Pansare, for that fascinating presentation.

**mp** 56:41
That was.

**Kamat, Deepak M** 56:44
RFP is really appreciated.
Thank you all for attending this morning's grand round.
I'm going to conclude and see you all next week, Friday at 7:30. Morning, 7:30 in the morning.
Thank you all.
Thank you, Doctor Pansare.

**mp** 56:56
Thank you for appreciate it.

**Kamat, Deepak M** 56:57
Yeah. Thank you. Bye, bye.

**mp** 56:59
Bye bye. Have a good weekend. Good Friday.
Enjoy the cheese day.

**Kamat, Deepak M** 57:03
Thank you.

**Kamat, Deepak M** stopped transcription