TO UNDERSTAND THE PATIENT'S JOURNEY, CURRENT NUTRITIONAL INTERVENTION, NEED STATE AND POTENTIAL OF GROVIVA ADVANCE IN PICU PATIENTS

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RESEARCH OBJECTIVE:

- To understand patient's journey in PICU stay
- To understand market opportunity
- To know outcomes and potential of Groviva Advance
- To understand Groviva in Lactose intolerance market.
- To know about Post-marketing Surveillance of Groviva advance

LITERATURE REVIEW

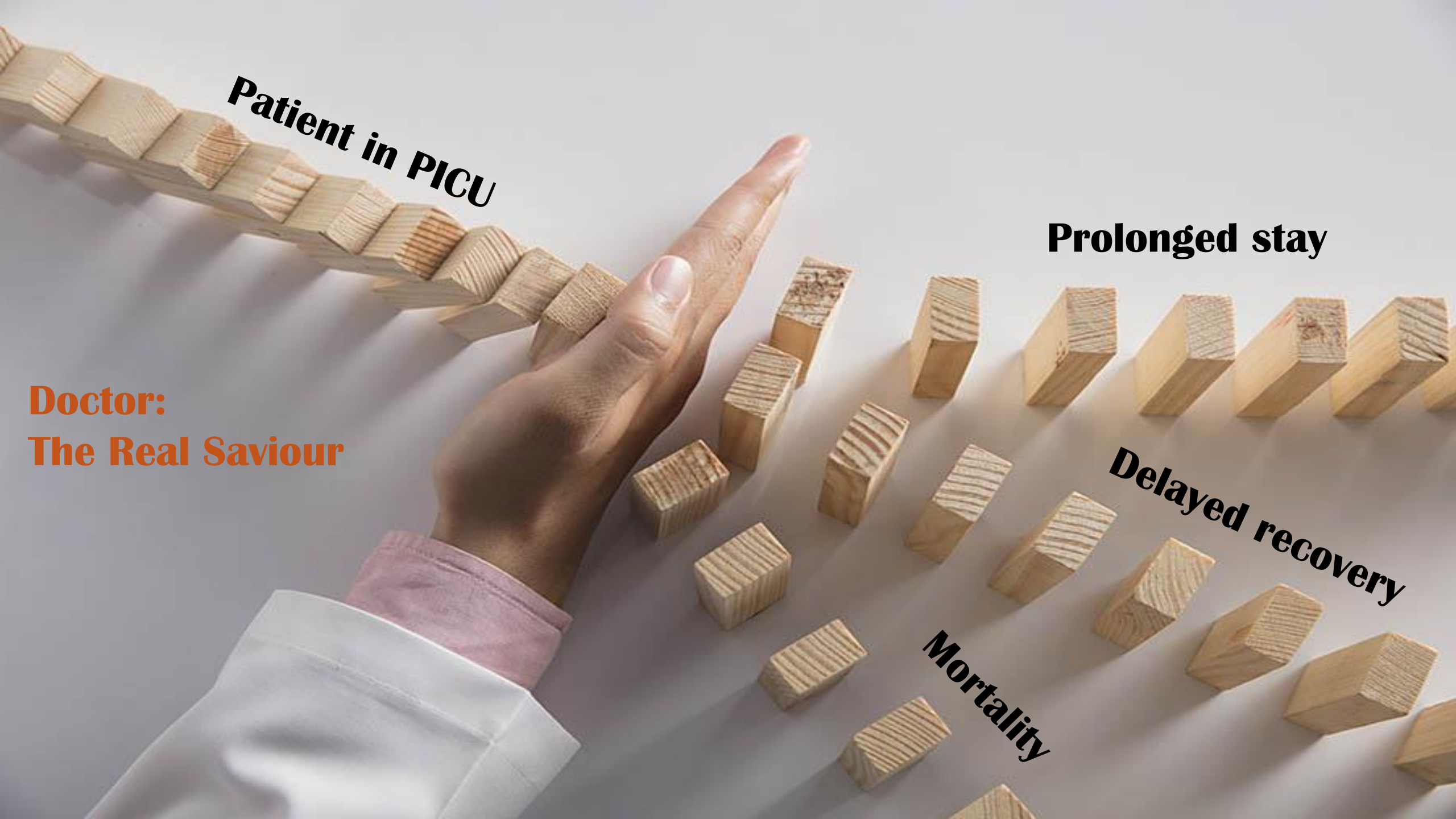
Title of the Study	Author's name and Year	Learning
Approach to Enteral Feeding in the PICU	Nilesh M. Mehta, MD, DCH. 2009	**In the PICU, nutrition support is provided either parenterally or enterally. Using EN While Critically Ill Has Many Benefits**
Monitoring of gastric residual volume during enteral nutrition	Hideto Yasuda etal. 2019	**Effects of malnutrition and EN treatment on PICU patients with malnutrition**

Paediatric emergency triage, assessment and treatment Care of critically ill children	World Health Organization 2016	**Updated PICU treatment guidelines and pharmaceutical treatments.**
Enteral Nutrition in the PICU: Current Status and Ongoing Challenges	Ann-Marie Brown. 2014	**Whether present at admission or acquired during the PICU stay, malnutrition in the severely sick or injured kid is linked to higher morbidities and mortality in the PICU.**


A child brings lot of happiness
Along with
Hopes,
Aspirations
Dreams


But one mishap
And their world comes to a standstill


Faster recovery is all they pray for
EMERGENCY
Right treatment
Right care
Right nutrition


Patient in PICU
Prolonged stay
Doctor:
The Real Saviour
Delayed recovery
Mortality

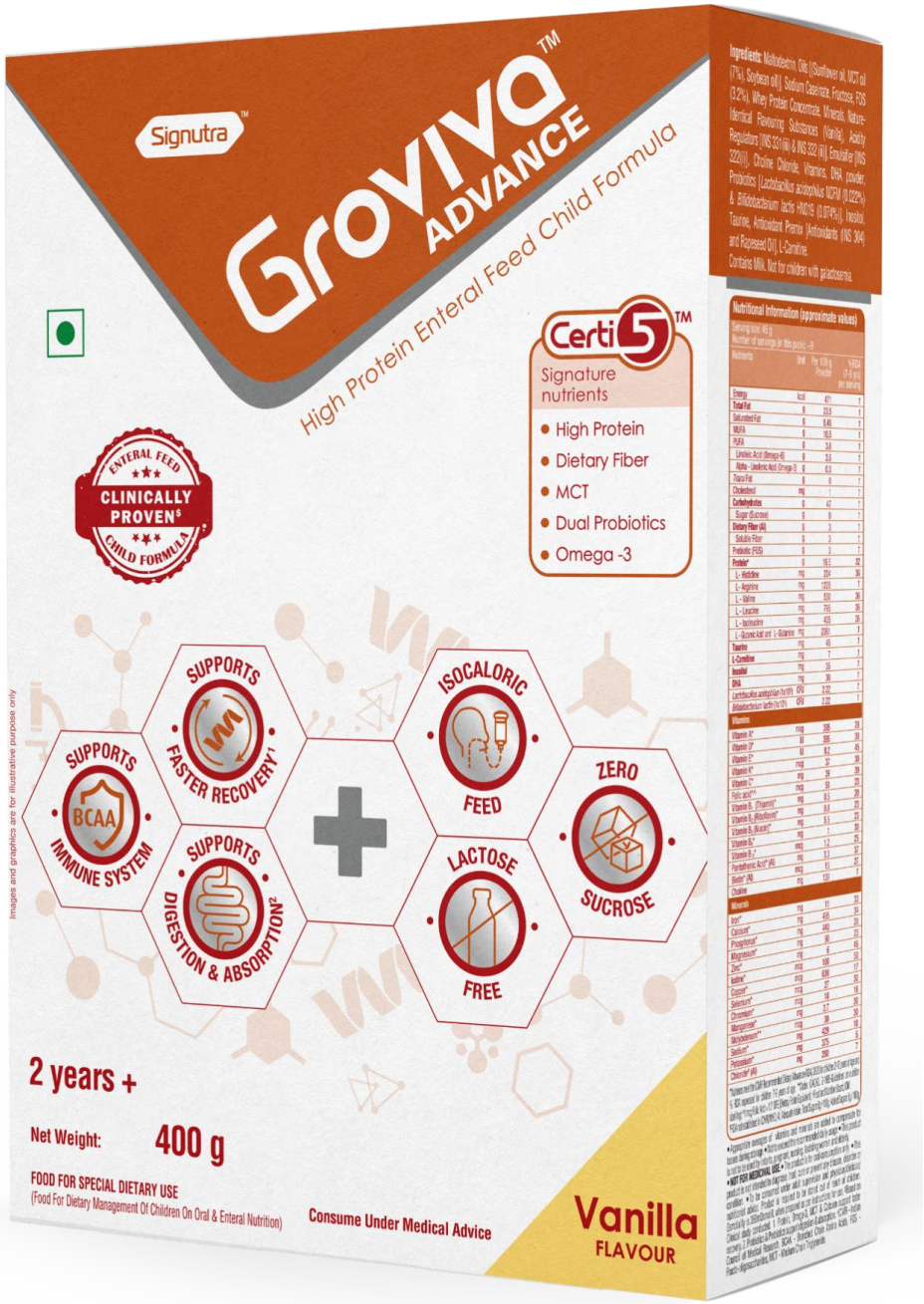
But when Nutrition becomes challenge

- What to give?
- How to give?
- When to give?

Introducing

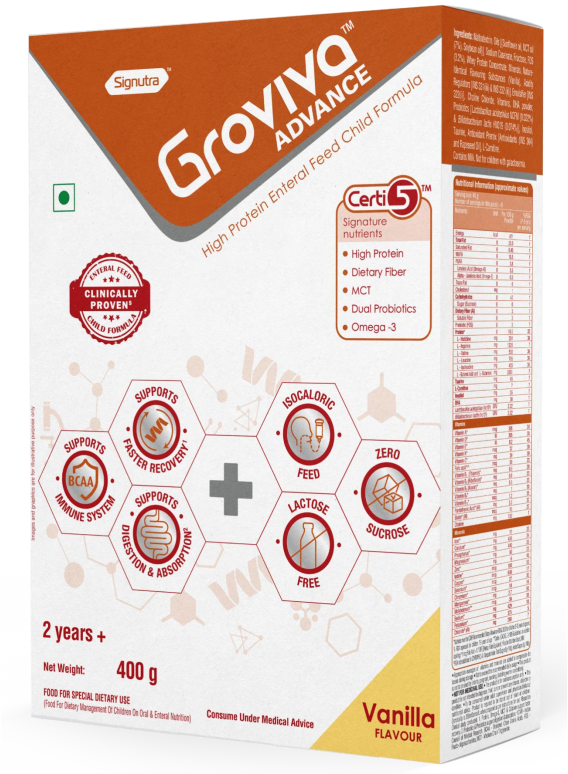
Groviva® ADVANCE

Advancing outcomes. Accelerating recovery.



PAEDIATRIC INTENSIVE CARE UNIT

UNDERSTANDING OPPORTUNITY



INTRODUCTION - PICU

PICU stands for **Pediatric Intensive Care Unit**

PICU **provides sick children with the highest level of medical care**

It **allows intensive nursing care and continuous monitoring** like heart rate, breathing, and blood pressure

It also allows medical staff to **provide more intensive therapies** like ventilators (breathing machines) and certain **medicines that can be given only under close medical supervision**

PATIENT'S JOURNEY TO PICU

Child undergoes surgery OR treatment of trauma and shifted to PICU

Intense monitoring of health parameters and nutritional requirement.

If child is NOT ABLE TO EAT ON ITS OWN, initial nutrition to be given through parenteral route

After 24-48Hrs. Based on condition of patient, Doctor shifts the child to enteral feed.

If patient is stable

Shifted to ward where less intense monitoring and follow-up care is required. Patient shifted to kitchen feed.

Child recovers

Released. Goes back home

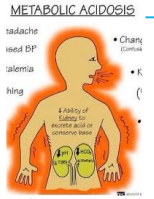
The Challenge - It is difficult to ensure delivery of required nutrition.

Role of Groviva Advance

CHILD IS ADMITTED TO PICU IF....

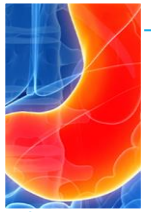
Respiratory issues (Asthma)

Injury or trauma

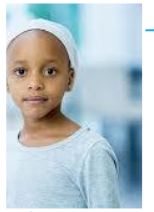


Metabolic disorders (Diabetic ketoacidosis)

Congenital malformation (Heart defects)



GI conditions



Cancer/Chemotherapy

Organ transplantation

Poisoning

IMPACT OF CRITICAL ILLNESS ON CHILDREN

Impact

- Physiologic stress response
- Urinary nitrogen losses
- Child is suffering pain, anxiety, fever
- Compromised GI tract

Challenge

- Child is under catabolic phase
- Wasting of endogenous protein
- Unable to fulfill their nutritional requirements

Need

- Increased caloric needs
- Huge quantity of protein
- Faster recovery
- Ease of administration

Critical illness + Poor nutrition leads to				
Prolonged ventilator dependency	Prolonged ICU stay	Increase susceptibility to nosocomial infections	Increased mortality	Delayed wound healing

MANAGING NUTRITION IS A CHALLENGE, LEADING TO MALNUTRITION

Incomplete nutritional assessment or lack of adequate nutritional support

Lack of co-ordinated care between medical and dietetic staff

Failure to maintain patient's dietary records and anthropometric data

Frequent withholding of food to accommodate lab investigations

Delayed initiation of nutritional support in patients

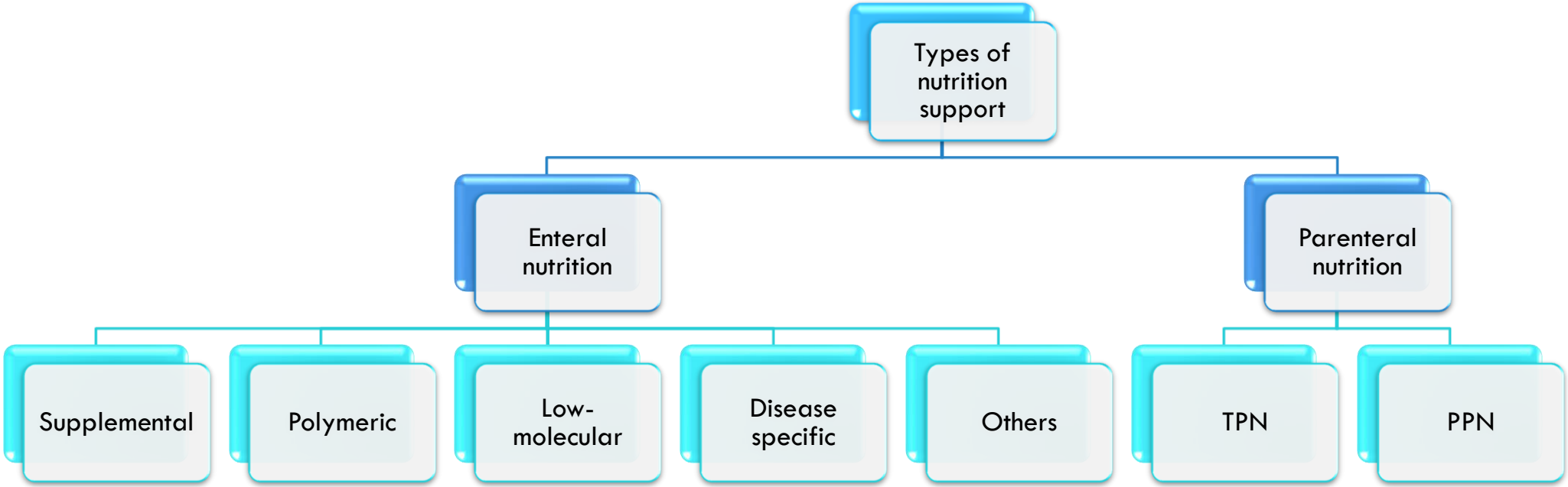
Most critical questions

What type of nutrition?

When to give?

How to provide nutrition support?

OPTIONS WITH DOCTOR FOR NUTRITIONAL SUPPORT



WHAT IS EN?

- Enteral Nutrition Support (ENS) traditionally has been regarded as delivery of food beyond the oesophagus via tube, either to the stomach or postpylorically.
- As per recent guidelines from the ESPEN,
- EN encompasses the use of *dietary foods for special medical purposes*, irrespective of the route of delivery

Indications

- Inadequate oral intake
- Disorders of digestion and absorption
- Disorders of gastrointestinal motility
- Increased nutritional requirements and losses
- Growth failure or chronic malnutrition
- Crohn disease
- Metabolic diseases

Contraindications

- Paralytic or mechanical ileus
- Intestinal obstruction
- Perforation
- Necrotising enterocolitis

ENTERAL NUTRITION VS PARENTERAL NUTRITION

Parenteral nutrition is preferred in children who are[1]

- Too ill to be fed normally by mouth
- Nasogastric or nasoduodenal tube feeding is often not tolerated
- Interruption of enteral feeding also occurs frequently for various reasons

However, Enteral nutrition is preferred over PN because[2]

- Preservation of GI function
- Technically more simple
- Better safety profile
- Avoidance of PN-associated complications
- 2- to 4-fold lower cost

GUIDELINES FOR ENTERAL FORMULA (AS PER ESPGHAN)

- Should supply a balanced mix of all the essential nutrients
- Sole source of nutrition
- Should generally provide at least 100% of the population reference intakes for healthy individuals of the relevant age group
- Delivered via tube but may also be taken orally
- Age adapted.
- An energy density of 1 kcal/mL. Feeds with a high energy density (1.5 kcal/mL) are useful in children with increased energy requirements.

KEY CRITERIA FOR ENTERAL FORMULA (AS PER ESPGHAN)

Gluten free, and most are either lactose free or contain only low amounts of lactose

Isoosmolality (300–350 mOsm/kg) is considered preferable

Dietary fibre are appropriate for most patients

High-fat feeds providing **more than 40% of the energy content as lipids** and hence with reduced glycaemic loads - beneficial in patients with stress metabolism

Medium-chain triglycerides (MCT oils) can be an advantage in patients with severe forms of fat maldigestion and/or malabsorption

The supply of some **long-chain omega-3 polyunsaturated fatty acids** may provide anti-inflammatory and immunemodulating effects

BRAND OFFERING

Groviva Advance is a **specialized high protein isocaloric enteral feed** to be given through tube feeding or orally; to fulfil the nutritional requirement of the **critically ill children of 2 to 12 years age admitted in pediatric ICUs** for their faster recovery owing to

- Isocaloric formula
- Rich protein content
- High on energy
- Easy digestibility and absorption
- Support growth and immunity

PRODUCT STRENGTHS

- Isocaloric formula
- High quality protein
- Ease of digestion
- Rapid source of energy
- Fortified with vitamins and minerals
- Contains pre- and probiotics
- Low osmolality

PRODUCT ATTRIBUTE - CLAIMS

PRODUCT BENEFITS - FUNCTIONAL

High Protein	High quality Protein helps improve lean body mass and is essential for muscle growth
Dietary Fiber	supports nutrient digestion and absorption.
MCT	Medium chain triglyceride oil are rapidly digested and absorbed and are rapid source of energy.
Dual probiotics	Probiotics (Lactobacillus acidophilus NCFM and Bifidobacterium lactis HN019) helps maintain normal bowel function.
Omega-3	Omega-3 fatty acid is known for its anti-inflammatory properties and its supplementation helps supports the hospitalized pediatric children in recovery.

CLINICAL STUDY OF GROVIVA ADVANCE:

The published study was titled, “Pilot Clinical Study to evaluate the safety and gastrointestinal tolerance of Groviva Advance in Hospitalized children requiring Isocaloric formula for enteral tube feeding.”

The study was conducted at KIMS Hospital, Hyderabad with 31 subjects.

Outcomes of study:

- Clinically proven efficacy
- Well tolerated.
- No serious adverse events
- No episodes of recurrent diarrhoea.

WHAT PROBLEM ARE WE TRYING TO SOLVE?

For PICU

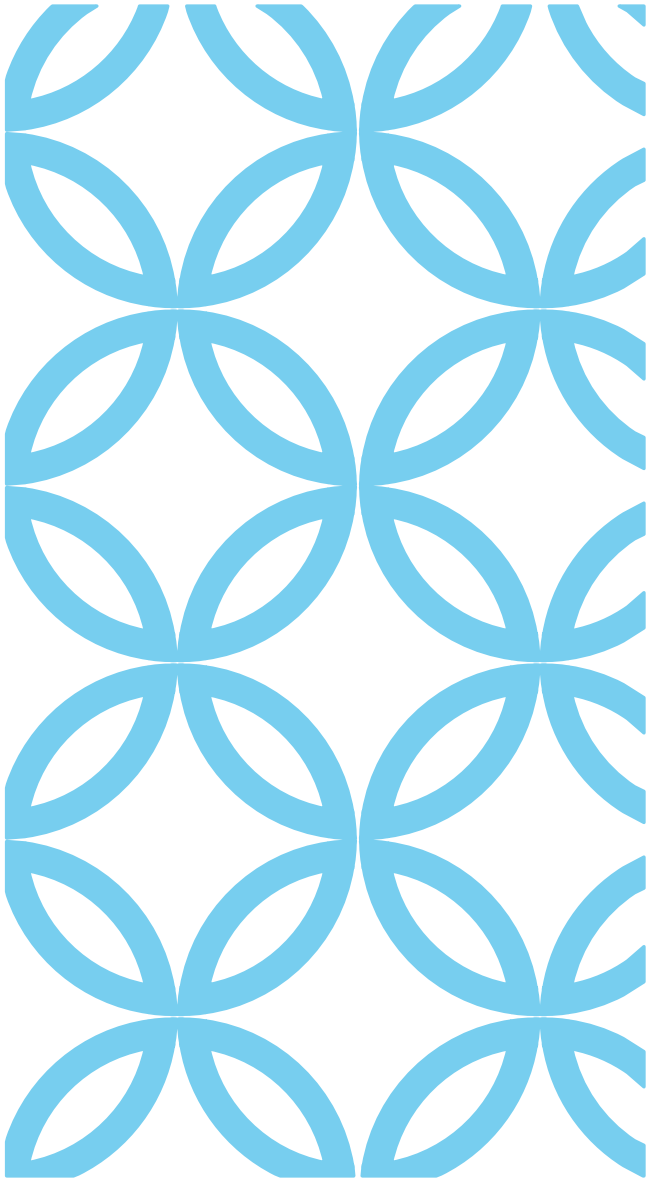
- Groviva Advance offers solution to the nutrition related challenges in children where doctor wants to initiate enteral feed
- Offers ease of reconstitution as dosage has to be accurate and nursing staff are not competent enough
- Isocaloric and right osmolality
- Supports faster recovery
- Takes care of gut microflora as it contains probiotics and prebiotics. Also, Easy to digest preteins enhances digestion and absorption
- Sugar free – beneficial for diabetic patients

For Lactose intolerance

- Takes care of lactose intolerance while fulfilling nutritional requirement of the children

CONCLUSION

Malnourished and critically unwell children are more likely to experience serious infections and need a longer stay in the PICU. So, the focus of the dissertation was to determine the patient pool in the PICU and current interventions, and the future implications for the patients at the PICU. Groviva Advance is Pediatric Nutrition Supplement that is given in the enteral feed to the patients in the PICU and it is a clinically tested product with the best compliance, osmolarity, and high protein. So, more interventions can be made for the PICU patient pool so as to establish a better healthcare environment.



THANK YOU