

# **DGEM Guidelines Enteral Nutrition - Surgery, Transplantation**

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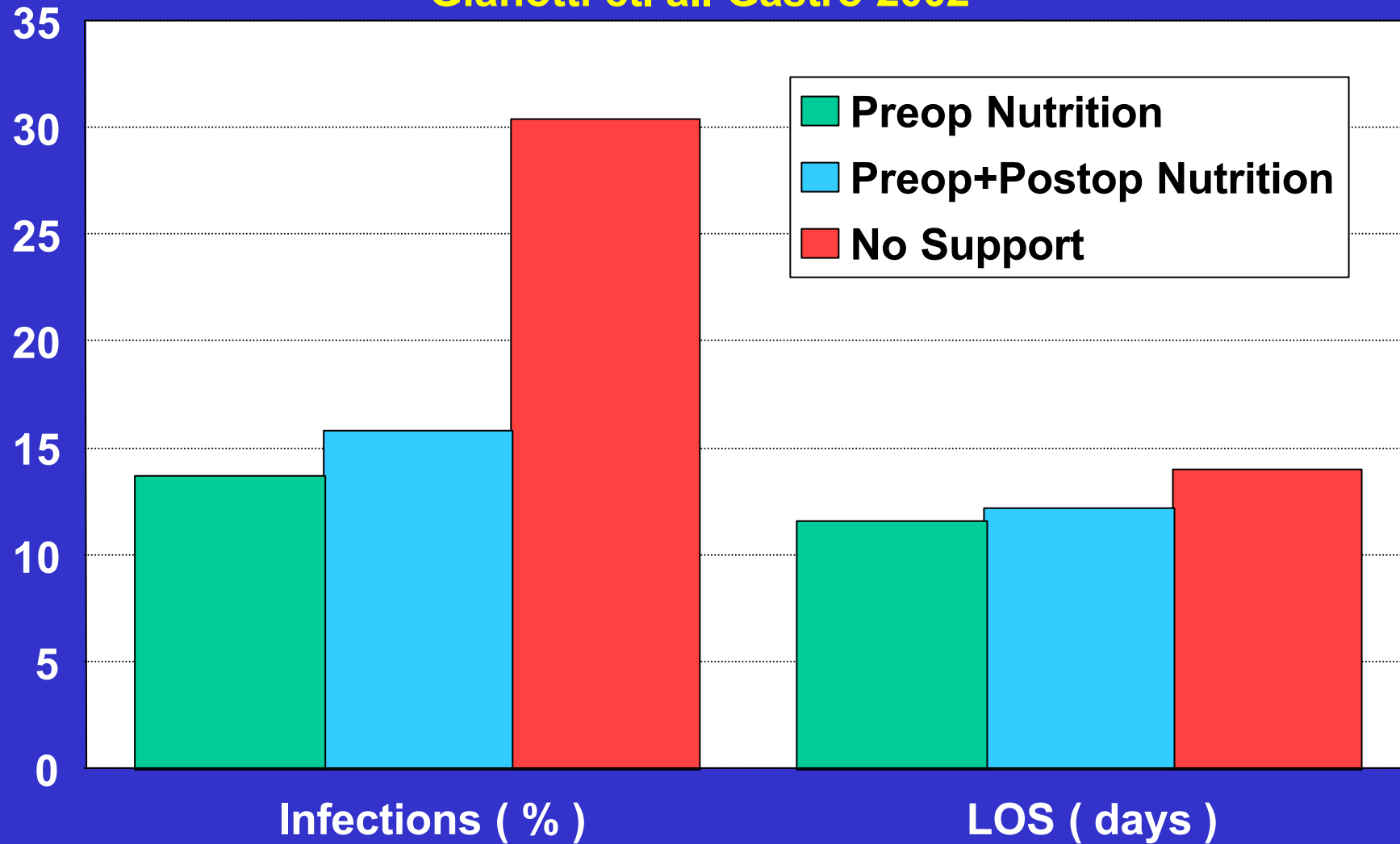
# Preoperative Nutrition

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- In malnourished patients preoperative nutrition is indicated even if that leads to delay of the operation ( A )
- Enteral Nutrition is preferable vs. Parenteral nutrition ( C )
- Preoperative immunonutrition for 5 – 7 days is recommended for malnourished cancer patients ( A )

# Perioperative Immunonutrition in GI Cancer

Gianotti et. al. Gastro 2002



# Postoperative Nutrition

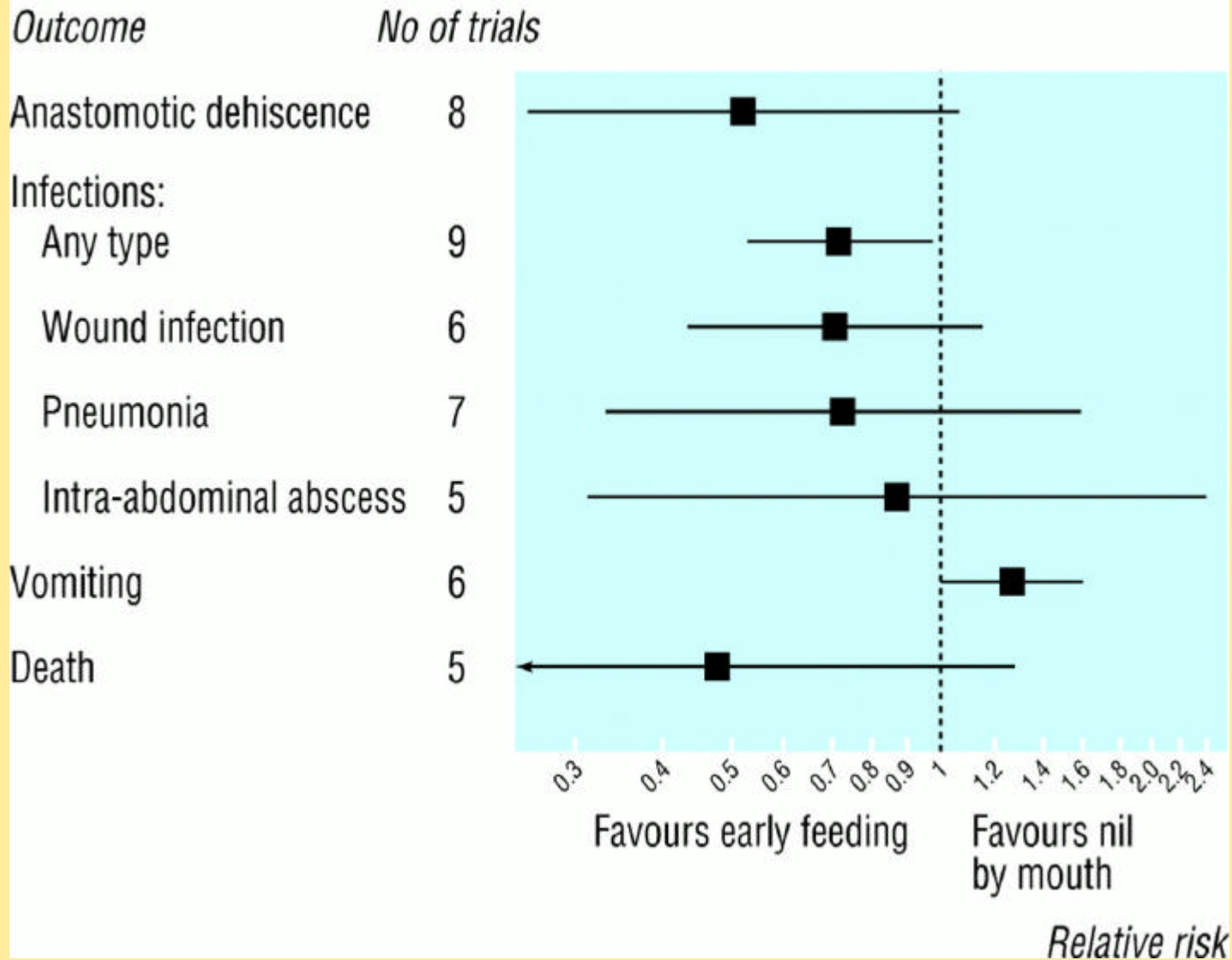
## When to begin?

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- Routine postoperative starvation is not necessary ( A )
- Early postoperative nutrition reduces p.o. complications( IIa )
- After anastomosis in the upper GI tract enteral nutrition should be started via a tube distal of the anastomosis (A )
- After anastomosis in the colon or rectum oral nutrition can be started on the first p.o. day ( A )

# Enteral Nutrition – Outcome

Lewis et. al. BMJ 2001

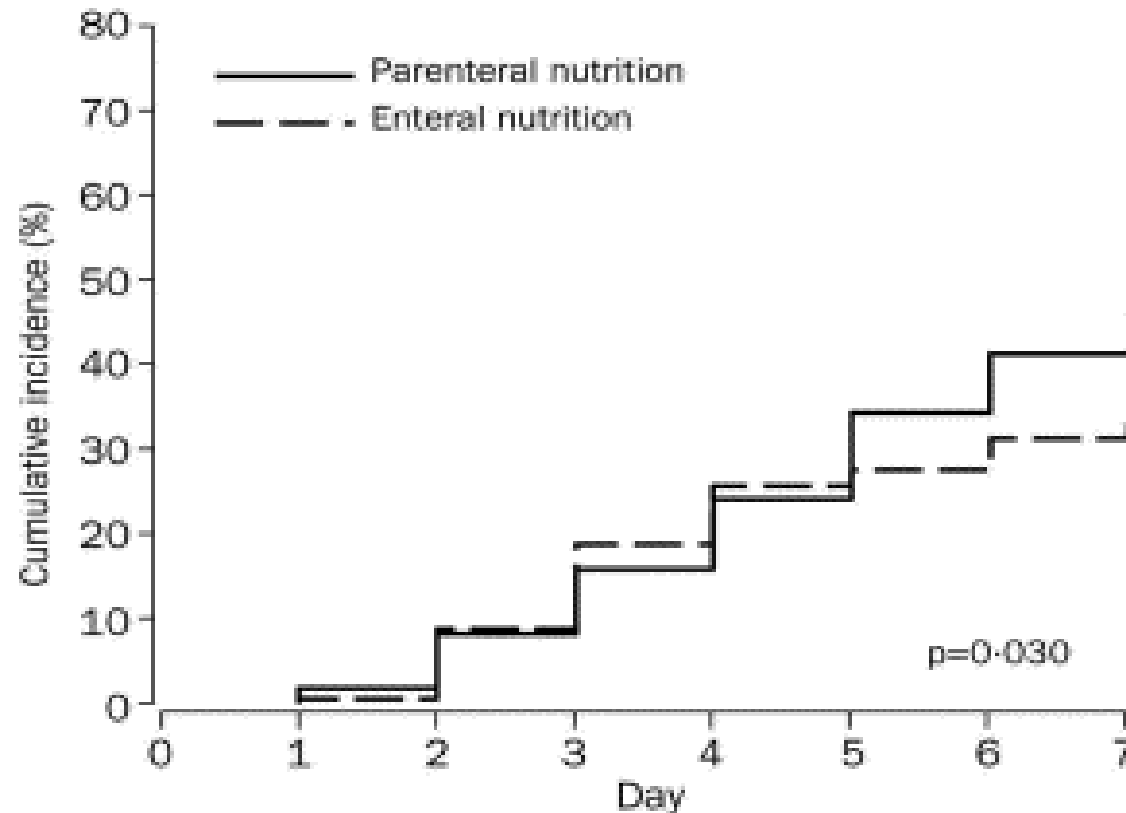


# Postoperative Nutrition enteral vs. parenteral

	enteral	parenteral
Complications n, patients,(%)	54 ( 34 % )	78 ( 49 % ) p < 0,005
LOS ( days )	13,4	15,0 p < 0,009
Adverse effects, n (%)	56 ( 35 % )	22 ( 14 % )

# Postoperative Nutrition

## Enteral vs. parenteral



### Number of patients at risk

Parenteral nutrition	158	154	144	132	119	103	92	84
Enteral nutrition	159	158	145	129	118	115	109	106

Bozetti et. al.  
Lancet 2001

# Postoperative Nutrition

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- **Patients who prospectively can not eat adequately for more than 7 days should receive enteral nutrition postoperatively without delay even if they are not malnourished ( C )**

# Postoperative enteral Nutrition

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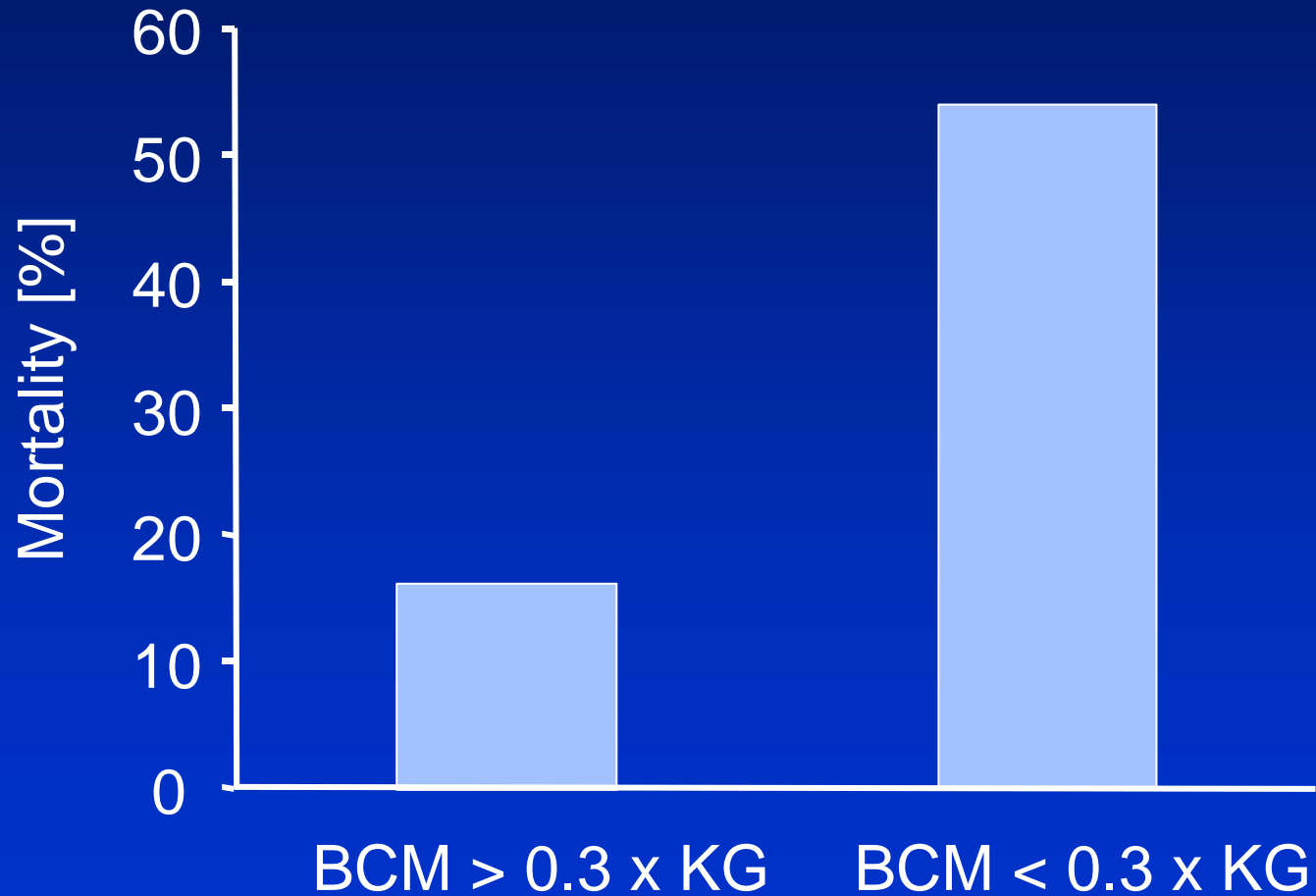
- Early enteral nutrition ( within 24 hours p.o. ) is advisable after
- big oropharyngeal or abdominal operations
- In polytrauma ( A )
- These patients should receive immunomodulating diet. A start with 5 – 10 ml/h is adequate. ( A )

# Enteral Nutrition Transplantation

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- Malnutrition correlates with a worse prognosis after liver transplantation
- Sip feeding or tube feeding is therefore indicated in malnourished patients while on the waiting list for LTX ( C )

# Malnutrition and Liver Transplantation Prognostic Role



Müller et al, Hepatology 1992, 15:782-94

# Enteral Nutrition Transplantation

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- Oral nutrition should be started after heart, lung and kidney transplantation without complications ( C )
- Enteral Nutrition should be started within 24 h after liver and pancreas transplantation ( C )

# **DGEM Guidelines Enterale Nutrition - Gastroenterology**

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C. Löser, V. Keim**

# **Enteral Nutrition**

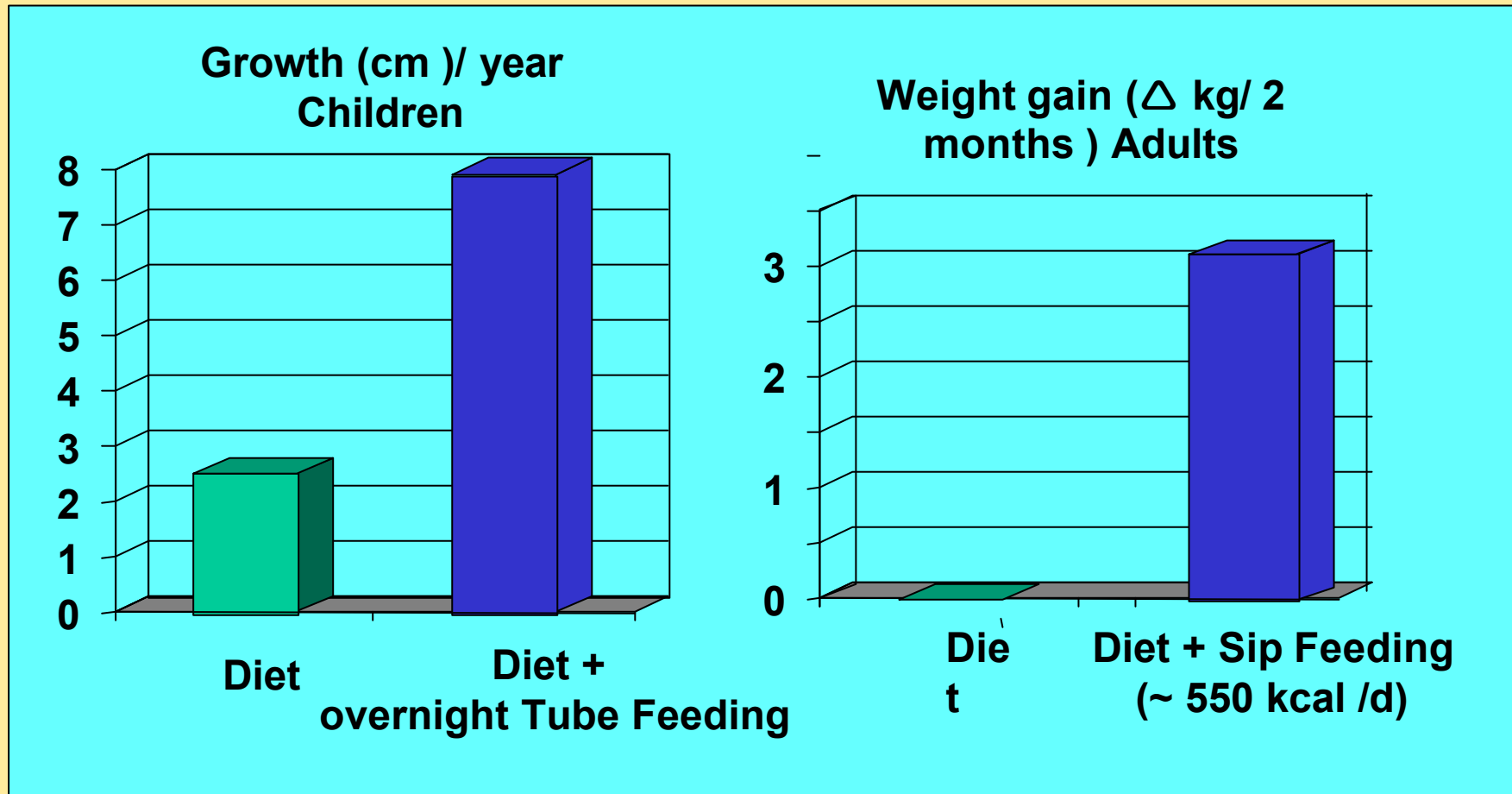
## **Crohn's disease - Malnutrition**

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- **Sip feeding and tube feeding in addition to the standard diet improves the nutritional status, and the consequences of malnutrition like growth retardation ( A )**

# Enteral Nutrition in IBD

## Effect on growth and weight gain



Belli et al. Gastroenterology 1988, Harries et al. Lancet 1983

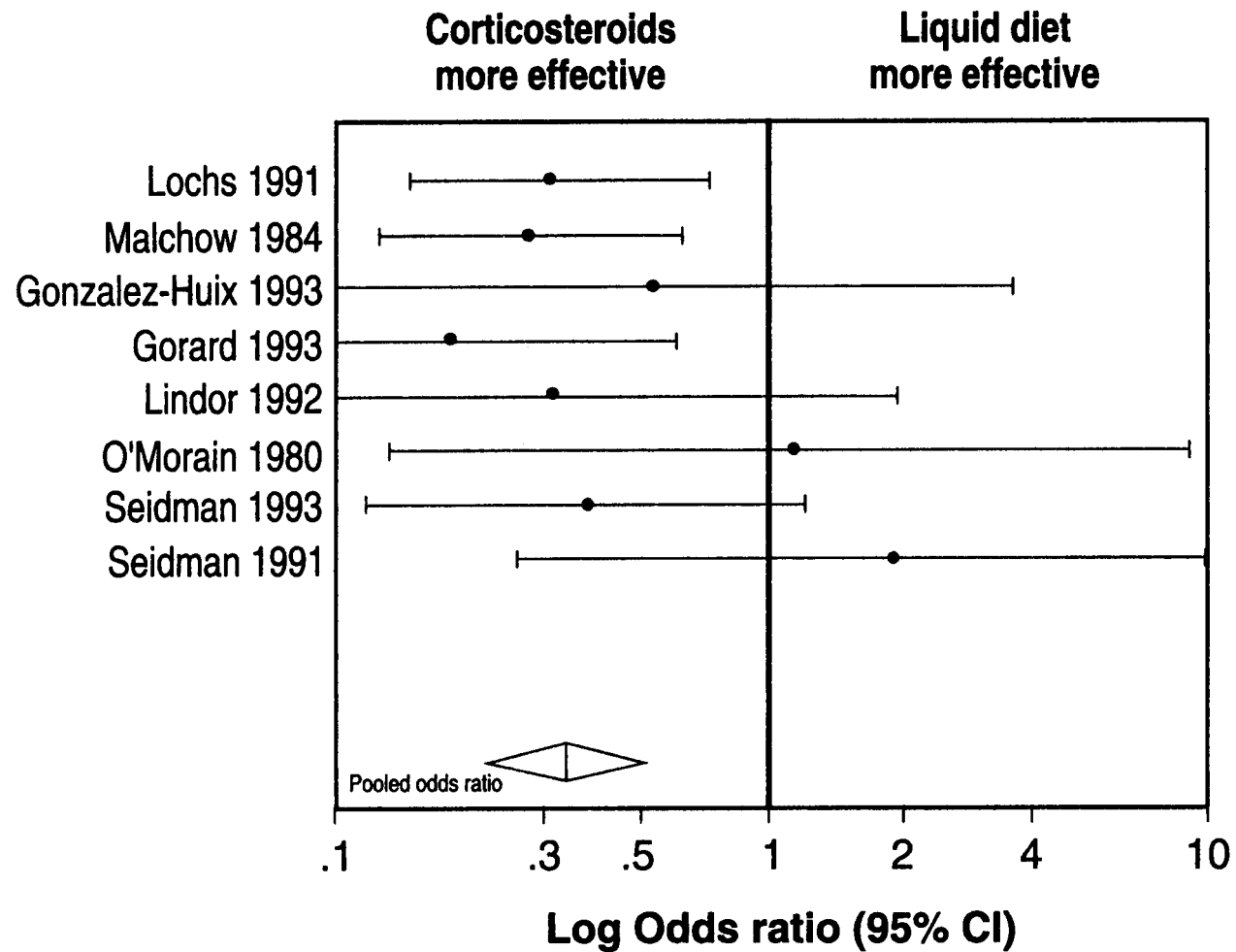
# **Enteral Nutrition**

## **Crohn's disease- Acute Phase**

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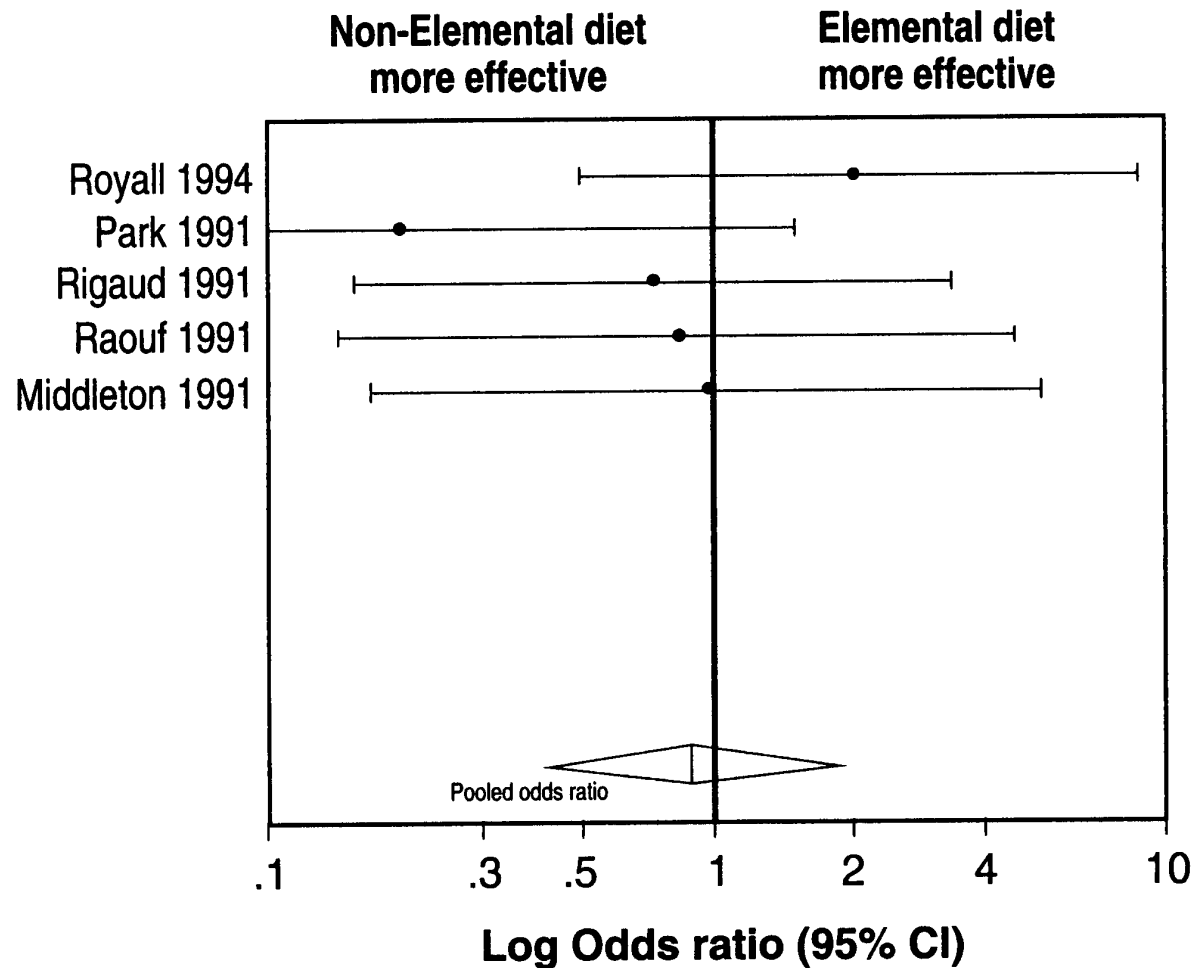
- **Enteral nutrition is effective as therapy of the acute phase, however less than steroids. It is therefore indicated if steroid therapy is not possible ( A )**
- **In malnourished patients a combination of enteral nutrition and steroids is recommended ( C )**

# Enteral Nutrition versus Steroids in CD



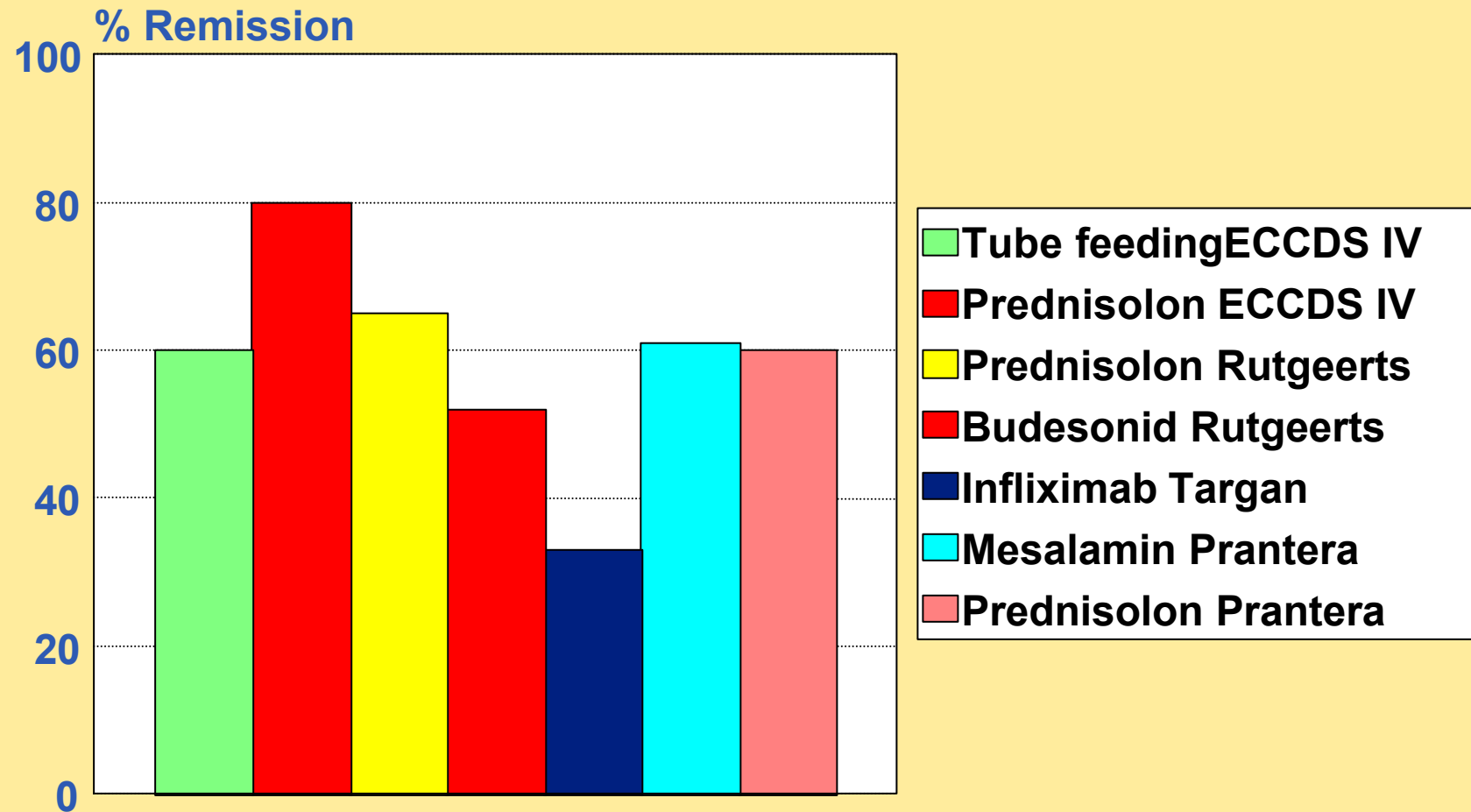
*Griffith et al, Gastroenterology 1995*

# Elemental versus Polymeric Diets in CD



*Griffith et al, Gastroenterology 1995*

# Efficacy of different treatments in active Crohn's disease



# Enteral Nutrition Pancreatitis

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- In light and moderate pancreatitis enteral nutrition is only recommended in malnourished patients (C )
- If the patient is not malnourished and can eat within < 7 days enteral nutrition offers no advantage( A )

# Enteral Nutrition Pancreatitis

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- Early enteral nutrition (<48 h) improves prognosis in severe pancreatitis ( A )
- Continuous tube feeding with an elemental diet is therefore recommended( A )
- If adequate enteral nutrition is not possible (e.g. Ileus ) low volume jejunal nutrition ( 10 – 30 ml/ h ) should be performed in addition to parenteral nutrition ( C )

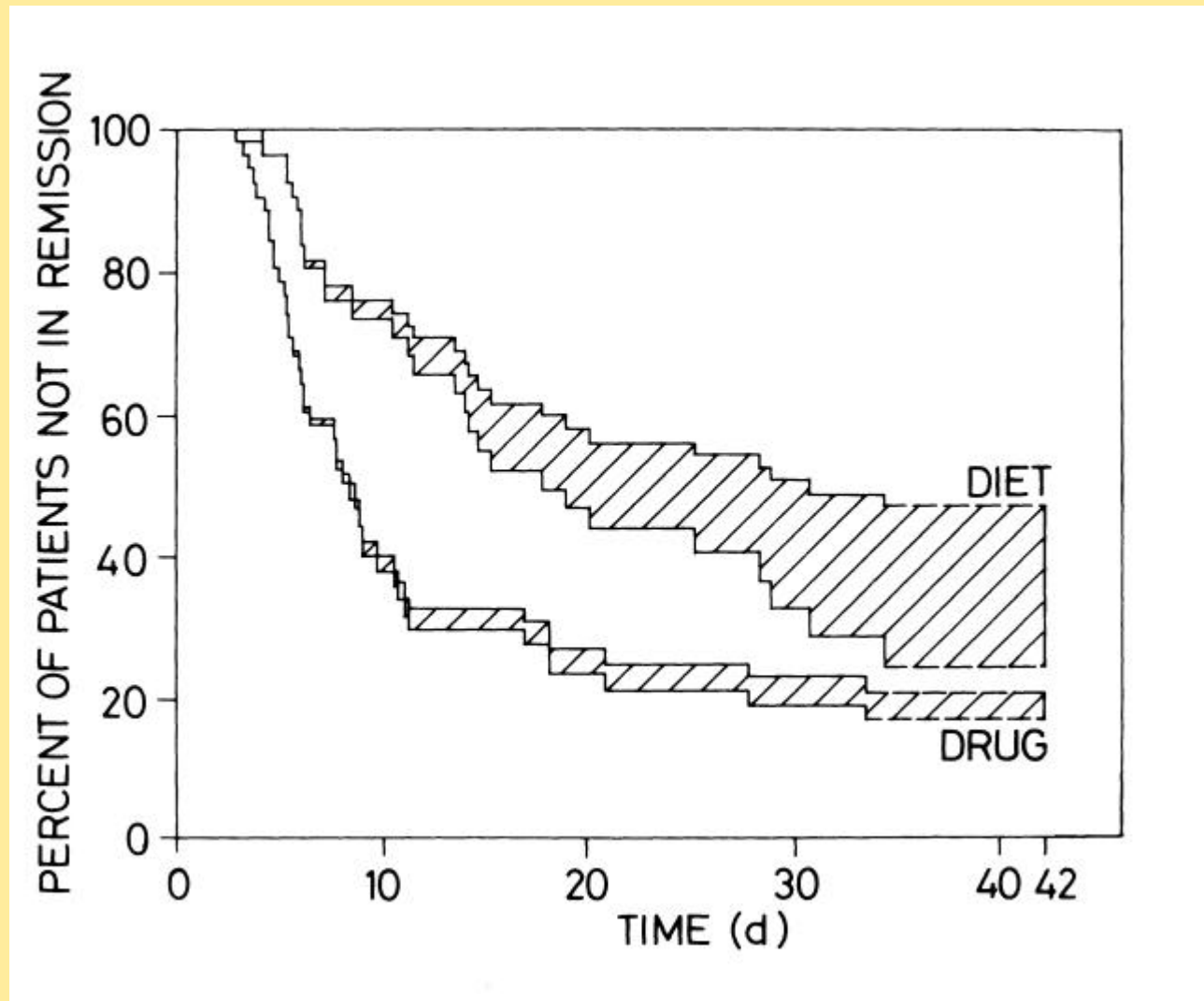
# **DGEM Guidelines**

## **Enteral Nutrition**

- **Nutritional Status**
- **Basics of enteral Nutrition**
- **Ethics, Legal**
- **Intensive Care Medicine**
- **Surgery, Transplantation**
- **Oncology**
- **Gastroenterology**
- **Hepatology**
- **Nephrology**
- **Diabetes**
- **Cardiology/  
Pulmonology**
- **HIV/ Wasting**
- **Geriatrics**

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# Enteral Nutrition in Crohn's Disease



*Lochs et al, Gastroenterology 1991*

# Sip feeding in steroid dependent CD

Verma et. al., Gut 2001

