AVOIDING CONTAMINATION IN ENTERAL NUTRITION

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USE OF ENTERAL FEEDING

(Patient UK, 2009)

- Malnourished patients
- Critically ill patients – *to promote gut integrity, and reduce mortality.*
- Post-operative patients – *to reduce complications, improve recovery and reduce length of stay.*
- Patients with severe pancreatitis (without a fistula) – *to promote resolution of inflammation or reduce the likelihood of cholestasis (bile cannot flow from liver to duodenum)* (Wikipedia, 2009b).

STATISTICS

- Up to 25% of patients on enteral nutrition experience diarrhoea (Whelan *et al.*, 2001; Bowling *et al.*, 1994).
- Stroud et al. (2003):
  - 30% incidence in enterally fed patients in medical and surgical wards
  - more than 60% in patients on intensive care units.

CAUSES OF DIARRHOEA IN E.F.

(Duncan & Silk, 2011; Stroud *et al.*, 2003)

- Feed delivery mode, rate and site
- Type of feed +/- fibre
- Drug reactions & antibiotics
- Infection/Contamination
- Lactase deficiency
- Fat malabsorption
- ? Temperature of feed
- ? Feed osmolality

CONTAMINATION in E.F.

(Bussy et al., 1992; Grunow et al., 1989)

- Contamination widely documented in studies on adult and paediatric patients, especially after long term use of bags.
- Grunow *et al. (1992):* Rinsing, in short-term feeding up to 7 days did not show significant contamination.
- Bussy *et al.* (1989): Contamination still present after rinsing of sets.

CONTAMINATION in E.F.

(Belknap & Davidson, 1989; Anderton & Aidoo, 1987)

- Contamination seen mostly during assembly and delivery of feeds.
- Avoided by using sterile gloves rather than assembling with bare unprotected hands.

WHY IS CONTAMINATION A HAZARD?

- Tube-feeding is highly nutritious and used in conditions conducive to exponential microbial growth.
- Feeds are commercially sterile until opened.
- Contamination with >104 organisms/g (as high as 2,000,000 organisms/mL) associated with GI illnesses.

WHY IS CONTAMINATION A HAZARD?

- Malnourished patients are already immunocompromised.
- NGTs and PEGs are foreign bodies.
- Warm climate poses higher risks.

HOW TO AVOID CONTAMINATION

- Wash hands before handling feeds or equipment
- Clean all equipment/surfaces related to feeding
- Avoid touching container/set which comes into contact with feed
- Change bags regularly (1 daily)
- Store feeds correctly
- Use gloves
- Check expiry dates of feeds and equipment
- Clean NGT/PEG sites daily

HOW TO AVOID CONTAMINATION

- Limit hanging time
- Use feeding pumps if available
- Allow container to empty completely before changing/refilling
- Avoid adding water, medications, colourants,… to formula
- Use full-strength formula feeds
- When GI intolerance seen, reduce rate – do not dilute feed

EARLY DETECTION OF INFECTION

- Be alert for any evidence of infection in patients receiving enteral feeds.
  - Diarrhoea, abdominal pain, nausea or vomiting *(Gastro Intestinal Infections)*
  - Redness, swelling, tenderness, pain and even ulceration of the skin around PEG Insertion Site *(Local or Percutaneous Infections)*
  - Fever, lethargy or confusion *(Systemic infections).*

OUTCOMES OF TAKING I.C. MEASURES

- Fewer infections
- Healthier patients
- Reduced pressure sores
- Reduced work-load
- Reduced costs (length of stay, antibiotics, human resources, other resources)
- Improved quality of life

WHAT WE HAVE TO KEEP IN MIND…

For most patients on enteral nutrition, that is their only source of nutrients.

So:

Do not stop feeding unless you absolutely have no choice.

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Thank You
Mahalo
Kiitos
Tack
Toda
Grazie
Obrigado
Thanks
Merci
Gracias