Clinical challenges associated with acute faecal incontinence in the critical care setting.

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Declarations of interest

- ConvaTec® have supported the research discussed and paid an honorarium to all members of the expert group.
Diarrhoea is the passing of frequent, watery stools
May be accompanied by nausea, abdominal pain, loss of appetite and fever
Diarrhoea is a symptom and can be
1. **Acute** – caused by a viral or bacterial infection, usually lasts 1-2 days and is not generally serious – danger of dehydration in babies, frail and elderly
2. **Chronic** (>2 weeks) – may be more serious and needs further investigation (5 days in children)
Developed by K.W. Heaton and S.J. Lewis at the University of Bristol to classify the form of human faeces into 7 groups.

Published in the *Scandinavian Journal of Gastroenterology* in 1997 as a guide to intestinal transit time.

Diarrhoea is typically classified as type 6 & 7.

### Bristol Stool Chart

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Separate hard lumps, like nuts (hard to pass)</td>
</tr>
<tr>
<td>2</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>3</td>
<td>Like a sausage but with cracks on its surface</td>
</tr>
<tr>
<td>4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>5</td>
<td>Soft blobs with clear-cut edges (passed easily)</td>
</tr>
<tr>
<td>6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>7</td>
<td>Watery, no solid pieces. <strong>Entirely Liquid</strong></td>
</tr>
</tbody>
</table>
Causes

- Lining of small or large intestine irritated (which leads to pain caused by strong, irregular contractions)
- Bacterial or viral infection from contaminated water, food
- Emotional upset or anxiety
- Too much alcohol, coffee, sweets and some medication
- Long term conditions – ulcerative colitis, irritable bowel syndrome, lactose intolerance, pancreatitis
Diagnosis

• Likely to settle within a week

• If persistent, blood in stools, dehydration – send sample for MC&S, look for bacteria, viruses or parasites
Acute Faecal Incontinence with diarrhoea (AFId)

But we are not just talking about diarrhoea, we are talking about acute faecal incontinence

- Containment
- Fluid balance
- Tissue viability
- Patient comfort

DIGNITY
Noroviruses

• Part of a group of viruses which commonly cause gastroenteritis

Known as:
• Small Round Structured Viruses (SRSV)
• Norwalk-like viruses
• Winter vomiting disease (can occur at any time of year)
C. **diff** Infection

- **C. diff** infection occurs when the normal gut flora is altered. **C. diff** flourishes. Produces 2 toxins A and B.

_**C. difficile** reproduces in the intestinal crypts, releasing toxins A and B, causing severe inflammation. Mucous and cellular debris are expelled, leading to the formation of pseudomembranes.

Toxin A attracts neutrophils and monocytes, and toxin B degrades the colonic epithelial cells, both leading to colitis, pseudomembrane formation, and watery diarrhea.
C. *diff* Infection

- Patient vulnerable to overgrowth of C. *diff* from either an:
  - *Endogenous* source
  - *Exogenous* source

or
C. *Diff* Colonisation

- Increases with age
- long-term-care facilities colonisation rates range from 4% to 20%
- Asymptomatic carriage
Risk Factors

- Antibiotics

- Antacids:
  It is presumed that increased gastric pH leads to decreased destruction of spores (Dial et al 2005)

- Laxatives

- Tube feeding

- Gut surgery
Transmission

• Faecal-oral route

• Hands!

• Contaminated environment
*Clostridium difficile* is spread via the fecal-oral route. The organism is ingested either as the vegetative form or as hardy spores, which can survive for long periods in the environment and can traverse the acidic stomach.

In the small intestine, spores germinate into the vegetative form.
Management

• Hand hygiene
  ➢ Staff
  ➢ Patients
  ➢ Relatives/visitors

• Is alcohol hand rub effective against C. diff?

Alcohol hand rub is less effective on C. diff spores and thorough hand washing with soap and water after every contact with the patient or their environment is essential.
Hand hygiene - Wards

May 2014
All staff compliance with hand hygiene by Ward
Before and After patient contact
(n=1078)

Yes 1051
No 27

Diagram showing hand hygiene compliance rates by ward for May 2014.
All staff groups monitored

May 2014
% Staff compliance with hand hygiene by Ward
Before and After patient contact
(n=1078)

Doctors 92%  Nurses 98%  Healthcare Support 99%  Other 99%
Containment

- Containment of diarrhoea to prevent spore transmission

Use a Bowel Management System i.e. Flexiseal if patient has more than one episode of faecal incontinence
There were only 7 cases in 2014
Bowel management system
Positioning in the rectum
Perineal dermatitis

Figure 4. Faecal incontinence resulted in perineal dermatitis.

Figure 5. Perineal dermatitis was reduced within 24 hours of Flexi-Seal® FMS insertion.
Peri-anal Excoriation

Figure 2. Extreme excoriation of the peri-anal region.

Figure 3. By day 7, skin integrity had returned to normal.
Further Work

- 4 Country survey on management options

- 4 Country observational study on management of AFId in critical care

- Results have informed practice and further work

- Publications and presentation in 2012/14
The FIRST™ Programme (Faecal Incontinence Re-evaluation STudy)

The FIRST™ programme
• to gather data on AFId
• to raise awareness of prevalence, clinical consequences, advances in the management of the condition.

• **Phase 1**: The FIRST™ Survey – to provide a snapshot of AFId in Europe.
• **Phase 2**: The FIRST™ Observational Study - challenges associated with AFId and the various management options
The FIRST™ Advisory Board

• FIRST™ Steering Committee:
  • C. Bayón García, Hospital Universitario Ramón y Cajal, Madrid, Spain
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Objectives of the FIRST™ Programme

1. **DATA**
   - Collect robust data on the prevalence of AFId and its management in the ICU and critical care setting

2. **AWARENESS**
   - Improve awareness regarding the risks and consequences associated with AFId in the ICU and critical care setting

3. **OUTCOME**
   - Optimize standards of care for AFId in the ICU and critical care setting in Europe
Objectives of the FIRST™ Programme

1. **DATA**
   - Collect robust data on the prevalence of AFId and its management in the ICU and critical care setting

- Phase 1 – FIRST™ Survey
  - A cross-sectional descriptive survey in 11 countries in Europe to provide a “snapshot” of key issues regarding the management of AFId in critical care and to collect qualitative and quantitative information on its prevalence, management approaches and risks

- Phase 2 – FIRST™ Observational Study
  - A prospective, observational study in Germany, Italy, Spain and the UK to evaluate the incidence and prevalence of AFId in the critical care setting and obtain data on current clinical practices using patient and healthcare staff site assessments
Objectives of the FIRST™ Programme

2

- **AWARENESS**
  - Improve awareness regarding the risks and consequences associated with AFId in the ICU and critical care setting

- Raise awareness of the scientific community through:
  - Scientific posters at national/international congresses
  - Publications in peer-reviewed journals
  - Oral communications at national congresses
  - Regular newsletter on FIRST™ Programme to survey respondents

- All supported by strong evidence
Objectives of the FIRST™ Programme

3

- **OUTCOME**
- Optimize standards of care for AFId in the ICU and critical care setting in Europe

- European consensus and recommendation for the management of AFId in ICU and critical care settings
- Requires multi-disciplinary input from all stakeholders involved (Clinical, nursing, infection control, wound care specialist, incontinence…)
- Endorsed by experts and possibly professional associations
FIRST™ Survey

• Questionnaire developed by the International Advisory Board distributed ICUs in 11 countries

• >3700 completed by physicians, nurses and pharmacists/procurement personnel
The FIRST™ Survey Results

Key learning

- AFId is a **substantial but underestimated problem**
- AFId associated with a **range of clinical consequences**, including skin breakdown and cross-contamination
- Management of AFId required a **high use of nursing time** and associated with additional management costs
- **Wide variability** in the adoption of protocols or guidelines which could improve care
- **Adoption of management guidelines** would be a step forward in improving the current management
Great interest from other regions: the survey has extended to Australia, Latin America and Canada.
The results from the 1st wave of responses/analysis were presented in a publication in Intensive and Critical Care Nursing:

**FIRST™ Observational Study**

**Design:**
- Multicentre, prospective, observational clinical study
- 46 hospitals across the UK, Germany, Italy, and Spain enrolled ICU patients with AFI
- Each ICU study centre was to enroll patients on the second episode of AFId within 24 hours
- Patients remained in the study for 15 days, or until AFId resolved, or until the patient left the ICU if less than 15 days
- Key study observations were collected from clinicians and nurses
Primary objective: To determine **current clinical practice** in management of AFId in European ICUs.

Secondary objectives:
- To determine the prevalence and incidence of AFId in ICU
- To study the effect of AFId on:
  - Perianal skin condition
  - Pressure ulcers (PUs; risk of development or existing)
  - Satisfaction of clinical staff providing care
  - Time required for HCPs to manage AFId
## Patient characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Patients (n=372)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender, male/female (%)</td>
<td>60/40</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>60.6</td>
</tr>
<tr>
<td>Mean weight (kg)</td>
<td>77.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reason for ICU hospitalisation</th>
<th>% patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary</td>
<td>27.4</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>14.0</td>
</tr>
<tr>
<td>Infection</td>
<td>12.9</td>
</tr>
<tr>
<td>Neurological</td>
<td>11.0</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>9.4</td>
</tr>
<tr>
<td>Trauma</td>
<td>8.3</td>
</tr>
<tr>
<td>Other (metabolic, renal, malignancy, etc.)</td>
<td>17</td>
</tr>
</tbody>
</table>
Patient characteristics
Reason for discontinuation and mean duration of AFId

Less than 13% of patients remained in the study for 15 days
Main reason for discontinuation was cessation of AFId

<table>
<thead>
<tr>
<th>Patients completing all 15 study days</th>
<th>% of patients (n=372)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death</td>
<td>10.2</td>
</tr>
<tr>
<td>Cessation of AFId</td>
<td>58.6</td>
</tr>
<tr>
<td>Discharge from ICU</td>
<td>28.1</td>
</tr>
<tr>
<td>Other (hospital discharge, consent withdrawal, etc.)</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Mean duration of AFId in the study was 6.8 days
Results – Prevalence and Incidence

Prevalence of AFId

- The overall prevalence of AFId was 17.4%
The overall incidence of AFId was 795 per 10,000 patient days.
Results – Management method
Methods used for the management of AFId

Less than 50% of the patients received an FMS during the early stages of AFId (up to Day 4)

Day 1-4: 47% FMS, 76% Traditional method
Day 5-9: 56% FMS, 57% Traditional method
Day 10-15: 61% FMS, 47% Traditional method

‘FMS’ group: patients receiving ‘FMS’ at some point of the day regardless of additional treatments methods (e.g. ‘traditional methods’).
‘Traditional method’ group: patients using absorbent pads, incontinence sheets, faecal collectors and tubes, but not ‘FMS’.

After long-lasting AFId (≥10 days) 39% of the patients did not have an FMS in situ
Results – Skin integrity
Proportion of patients with altered perianal skin

From AFId onset, 40% of the patients have altered perianal skin

After 15 days of AFId, 63% of the patients had skin excoriation, 26% of which was classed as moderate-to-severe excoriation.
Country variation demonstrates a differences in local policies:
Tests generally required to confirm a suspicion of infection in Spain (only 10% of patients tested at baseline)
Aggressive screening for all patients at risk in the UK (59% of the patients tested at baseline).

Results – *C. difficile* infections
Proportion of stool samples taken for testing

- Proportion of stool samples taken to be tested for *C. difficile* infections
About 50% of nurses reported they were very satisfied with FMS to manage AFId.
Prevalence and incidence reported in the observational study are similar to the values reported in the literature.

- **Prevalence** varied between countries but overall was 17.4%.

- **Incidence** of AFId was 795 per 10,000 patient days.

The majority of the patients studied did not have insertion of a FMS until day 4.

After long-lasting AFId (≥10 days) 39% of the patients still did not have a FMS inserted.
FIRST™ Observational Study

Conclusions

- A high proportion of the population studied had altered perianal skin:
  - 40% had **excoriation** at baseline
  - 27% had at least one **pressure ulcer** at baseline.

- The proportion of patients with poor skin integrity increased with the duration of AFId. At 10 days:
  - <40% of the patients had **healthy skin**
  - 45% of the patients had at least one **pressure ulcer** in the sacral, perianal/buttocks region
Nurse satisfaction was much higher for nurses using FMS vs traditional methods

- About 50% of nurses reported they were very satisfied using a FMS for AFId (less than 19% with traditional method) at end of study.

The proportion of diagnostic tests for *C. difficile* infections varies greatly depending on the country:

- While in Spain it seems that tests are required to confirm a diagnoses, in the UK aggressive screening for *C. difficile* is set for all patients at risk from AFId onset.
Recent publications have illustrated that AFId in the ICU settings is a substantial but underestimated problem.

Many units still do not have guidelines or protocols for managing AFId in the critical care setting.

The development of expert recommendations is essential to:

- Ensure that all patients with AFId are more effectively assessed and managed.
- Reduce the clinical consequences and costs associated with AFId.
- Consider the comfort and dignity of the patient and care givers.

**FIRST™ Expert Recommendation & Management Algorithm**
AFId Management Algorithm

• Patients may enter ICU with various comorbidities
• Co-morbidities or AFId severity can complicate management choices
• AFId management algorithm acknowledges variety of patient conditions e.g. risk of skin breakdown and risk of transmitting C. difficile
• Algorithm designed as a practical guide for HCPs to manage AFId in the ICU
**AFId Management Algorithm**

**Diagnosis of AFId** - A second episode of faecal incontinence with diarrhoea (liquid or semi-liquid stool, Bristol stool chart type 6-7) in 24 hrs

**AFId with or at risk of developing complications, e.g.:**

*Risk of skin breakdown in perineal region e.g.*
- Moisture lesion, excoriation, pressure ulcer, burn - Wounds at risk of infection / Fasciitis - Fournier’s gangrene - Post-Op e.g. transposition flap

*Risk of cross infection, e.g.*
- *C. difficile*, MRSA, *E. Coli*, ESBL, CRE, etc. - Enteric infection/enteritis with no isolation facility

*Immobility, e.g.*
- Severe respiratory failure - Multiple trauma e.g. pelvic ring disruption - ECMO (Extra corporal membrane oxygenation) - Large-bore arterial/venous access - Morbid obesity

*Very frequent or long lasting diarrhoea, e.g.*
- Pancreatitis - Hepatic encephalopathy - GI bleeding with melena - Induced (intentional/unintentional) - Allogenic transplant/ GVHD (Graft vs. Host Disease) - Post-resuscitation care syndrome

*Other clinical conditions, e.g.* Tube feeding / Poor nutritional status

*Patient comfort and dignity* - For palliative care reasons

**AFId with good prognosis, e.g.:**

- Well nourished/hydrated
- Short hospital stay
- Treatable
- Mobilised / Mobilising soon

**Manage with traditional methods**
- e.g. pads, incontinence sheets, faecal collectors - Evaluate regularly

**Contraindications for faecal management system (refer to product insert)**

- No
- Yes

- Insert FMS device
- Evaluate every 12 hrs

- Management with traditional methods (e.g. pads, incontinence sheets, faecal collectors)
Thank you