Antibiotic Use In Patients With Life Limiting Illness

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Dr Julie Langton  

Dr Godfrey Smith  

22 March 2012
Current Guidelines and Standards

Dr Clare Finnegan
Current guidelines - General principles

• Consider treatment goals first
  – Symptomatic relief
  – Cure of reversible infective complications to maintain QOL
• The goals of treatment will determine the need for laboratory investigations.
• It may be possible to discontinue antibiotics within 48 hours of good clinical response.
Current guidelines - General principles

- If a patient is unable to take oral antibiotics, a period of 24-48 hours of intravenous antibiotics may be indicated. These can be administered within the hospice setting if the staff feel adequately trained. Transfer to an acute unit is an alternative option.
- Consider the possibility of neutropenic sepsis
  - Patients with neutropenic sepsis must be discussed with the oncologists urgently
  - Locally agreed policy must be followed
Current guidelines - General principles

• Hospital antibiotic policies vary
  – Locally agreed policy takes precedence over this guidance
  – Discuss with microbiologists if no response to treatment or troublesome side effects
• All antibiotics carry a risk of side effects and it is important to minimise that risk. E.g. gastrointestinal upsets are common with some antibiotics
• All staff to receive hand washing education
Current guidelines - Cellulitis

- If patient is systemically unwell, consider initial course of IV antibiotics before conversion to oral therapy
- If a patient has rapidly swelling cellulitis 24-48 hours iv therapy and then review
- If patient has lymphoedema and cellulitis, continued prophylactic low-dose antibiotics may be needed after treatment (penicillin V first line)
Current guidelines – Chest Infection

• Send sputum for microbiology asap
• If no response to antibiotics and cultures are negative, consider atypical organisms eg chlamydia, mycoplasma
• Physiotherapy, bronchodilators, corticosteroids and hydration are also important
Current guidelines - Neutropenic Sepsis

- Febrile neutropenia
  - $T \geq 37.9^\circ$ on at least one occasion, **plus**
  - Neutrophil count $\leq 1 \times 10^9/l$

- Neutropenic sepsis
  - As for febrile neutropenia, **plus any of the following clinical features**
    - Rigors
    - Confusion
    - Hyperventilation
    - Hypotension
Current guidelines – Neutropenic Sepsis

• Classically 7-10 days after chemotherapy
• All patients with suspected neutropenic fever should have full clinical assessment and FBC done
• Always discuss patient with medical oncologist
• If prolonged neutropenia consider antifungal prophylaxis
**Current guidelines – Neutropenic Sepsis**

- Patients are assigned to a risk index to decide appropriate treatment. Management protocols are determined by chemotherapy unit policy.
- If in doubt, patient is assumed to be high risk.
- Patients may need urgent transfer to an acute unit.
- High risk patients get IV therapy (tazocin and gentamicin 1\textsuperscript{st} line).
- Low risk patients get oral therapy and may also get early discharge if appropriate.
Current guidelines - UTI

• Only 50% of episodes of dysuria are caused by bacterial infection of the bladder
• Before commencing antibiotics:
  – Dipstick urine
  – If negative for leucocytes and nitrites, it is probably NOT an infection
  – If positive, send MSU
• No need to wait for MSU result before starting treatment
Current guidelines - UTI

• Consider vulvo-vaginal candidiasis if persistent symptoms and MSU with raised WCC and no growth

• Catheterised patients
  – Reserve antibiotics for symptoms of bladder wall inflammation and / or kidney infection.
  – Dipstix tests are unhelpful.
  – Routine use of antibiotics during catheter change is not indicated.
Current Guidelines - Fungating wound odour

- Metronidazole 400mg tds, reducing to 200mg tds after 7-10 days
- Topical metronidazole (0.8% metronidazole in aqueous base) should be restricted to patients for whom systemic metronidazole is ineffective
Current Guidelines - MRSA

- Staff education regarding hand washing and high standards if ward cleanliness is priority
- There is no definitive evidence on the long term benefits of decolonisation
- Consider seeking microbiology advice
- Leaflets on MRSA should be provided
- Patients with MRSA bacteraemia may need transfer to acute unit
- Glycopeptides antimicrobials remain mainstay of treatment e.g. vancomycin or teicoplanin
Current Guidelines - Clostridium Difficile

- Prevention is better than cure
- Staff and visitors should ensure strict personal hygiene is observed. Hands to be washed with soap and water as alcohol washes do not kill the spores
- Isolation should be considered for patients who are faecally incontinent
- The use of antibiotics should be rationalised
Current Guidelines-Clostridium Difficile

- Patients may require supportive care with hydration and correction if electrolyte imbalance depending on their clinical condition. Good nutrition should be centered on a balanced diet which includes soluble fibre to sustain colonic colonisation by friendly bacteria (prebiotic approach)
- No requirement to repeat stool culture at end of treatment
Current Standards

1. Specimens for culture and sensitivity should be sent to microbiology before the initiation of antibiotic treatment whenever possible. [Grade D]

2. Antibiotic guidelines should be updated every 2-3 years. [Grade D]

3. Any known allergies to antibiotics should be clearly recorded in the patients notes and on the medication chart. [Grade D]

4. Inappropriate prescribing of antibiotics should be avoided. [Grade D]

5. All palliative care inpatient units should have a MRSA policy. [Grade D]
Current Standards

6. All staff should be educated about the importance of ward cleaning and hand washing. [Grade D]
7. Information leaflets on MRSA should be available for all patients/ families. [Grade D]
8. Any patient with diarrhoea and known antibiotic use should have a stool sample sent urgently for screening for C. difficile toxin. [Grade B]
9. In patients with Clostridium difficile there should be an urgent review / discontinuation of any antibiotics prescribed. [Grade B]
Current Standards

10. Patients with Clostridium difficile infection should be isolated and barrier nursing / gloves used where possible. [Grade B]

11. Intravenous therapy should be reviewed every 24 hours with a view to oral stepdown at the earliest opportunity. [Grade D]

12. Where intravenous antibiotic therapy is anticipated to be required for >5 days, early consideration of placement of a midline or PICC linse should be considered for patient comfort and the possibility of home IV therapy, [Grade D]
Literature review

Dr Clare Jeffries
What to expect…

• Methodology
• Antibiotics and Advanced Cancer
• Antibiotics and Dementia
• NICE
• SIGN
• DoH – antimicrobial stewardship
• Summary of main points
# Methodology

**Database search**

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Search extended through relevant references and authors

**Hand searching**

- contents pages of Palliative Medicine, J Palliative Medicine, J Pain and Symptom Management.

(1633)

**Guidelines**

- NICE Guidelines | “antibiotic”(159)
- SIGN Guidelines | “antibiotic” (98)
- DoH Guidelines  | “antibiotics” OR “antimicrobial”
Antibiotics and advanced cancer

- 13 papers (published 1998-2012)
- Mainly retrospective review of medical records, 3 prospective cohort studies.
- Canada, Australia, USA, Hong Kong, Taiwan, South Korea, Saudi Arabia
- Specialist Palliative Care Unit, Hospital and Community
- Topics: Use of antibiotics/Frequency and Sites of infection/Improvement of symptoms or fever/Survival
Antibiotics and advanced cancer – Symptom control
Mirhosseini M and Oneschuk D. The role of antibiotics in the management of infection related symptoms in advanced cancer. Journal of Palliative Care. 2006; 22, 2; 69-74

**Study**  Prospective cohort

**Aim**  To evaluate effect of antibiotics on infection related symptoms in patients with advanced cancer.

**Patient**  26 patients with new infections after admission to unit

*(Exclusion previous infection, unable to complete ESAS at start of study)*

**Setting**  Tertiary Palliative Care Unit, Edmonton

Pre and post antibiotic Edmonton Symptom Assessment Scores. Patient/relative and physician rated infection symptoms.

**Findings**  26 patients with 31 episodes of infection were included. *Patients* scores showed small improvement in all variables except anxiety, with dysuria and “infection related symptoms” being statistically significant

*Physician* assessment of symptoms showed small improvement in all variables with cough being statistically significant

25% died within one week

**Study**  Prospective cohort

**Aim**  To evaluate if parenteral antibiotics are beneficial to hospice patients.

**Setting**  50 bed inpatient palliative care unit, Australia

**Patients**  41 patients (36 Advanced malignancy, 6 HIV)
  Admission for symptoms (26); end of life care (5), respite (10), receiving DXT(2)

**Findings**  41 patients received 43 courses of iv antibiotics

Patients grouped into acute phase(8), stable(17), deteriorating(12) or terminal(6) *

Outcome assessed clinically: 62% helpful; 19% unhelpful; 19% other;

UTI more commonly associated with helpful outcome 88% c.f. other indications 48%.

Helpful outcomes were more commonly associated with bacterial sensitivities (88%) c.f. no sensitivities (46%).

Outcome varied according to palliative care phase at time of antibiotics.

Helpful in terminal (83%) and stable phase (71%) c.f. deteriorating (58%) or acute phase (38%)

No association with outcome and age/underlying diagnosis/reason for admission.

*(Australian -National Palliative Care Case mix Classification)*

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<th>Patient Setting</th>
<th>Community outpatient hospice and palliative care program. Patients at home with caregiver. Hospice nurses visited routinely prn.</th>
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<tr>
<td>Patients chose</td>
<td>A) Full antimicrobial use for suspected/established infection. B) Antimicrobial use for symptom control only or C) No antimicrobial use</td>
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<td>Patients were followed and use and effectiveness of antibiotics recorded.</td>
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**Findings**
79% chose option B or C. Patients choices were influenced by age, current condition, wanting life prolongation.
117 pts had 129 infections (commonest urinary, respiratory, mouth/pharynx, skin)

Antimicrobials controlled symptoms in most UTI, but were less effective (less than 50%) at controlling symptoms at other sites.
No difference in frequency of infections in patients on corticosteroids or with catheters.
Survival was not affected by patients choice of whether to use antimicrobials, prevalence of infections, antibiotic use.
Antibiotics and advanced cancer – Fever Resolution
Oh DY. Antibiotic use during the last days of life in cancer patients. European Journal of Cancer Care. 2006; 15:74-79

**Study**  Retrospective medical record review

**Aim**  To evaluate frequency of infection, current antibiotic use and their effects in advanced cancer patients receiving palliative care.

**Patients**  141 patients, terminal stage cancer

**Setting**  University Hospital in Seoul

**Findings**
106 (75%) had febrile episode, 113 had infection clinically
119 (84%) received antibiotics
90 (64%) received antibiotics until death
48% with antibiotics controlled fever
Symptomatic improvement 18 (15.1%)
No symptomatic improvement 66 (55.4%)
Chen LK et al.  
Antibiotic prescription for fever episodes in hospice patients.  
Support Care Cancer. 2002; 10: 538-541

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<tr>
<th>Study</th>
<th>Retrospective study of medical records (over 2 years 1999-2001)</th>
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<td>To analyse the management of fever episodes including antibiotic use in palliative care unit</td>
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<td>Setting</td>
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Assessed antibiotic use, response in terms of fever, performance status (KPS), verbal communication score (VCS), Glasgow coma scale (GCS), and survival.

**Findings**

93 patients (16.7%) had fever  
79 patients (84.9%) treated with antibiotics and 14 (15.1%) with antipyretics only  
Blood tests 51%; Urinalysis and cultures 23%; Blood cultures 24%; Other 17%  
KPS, VCS and GCS were similar in all patients on admission.  
These parameters were significantly compromised in febrile patients.  
Worse in those whose fever was not treated with antibiotics

**Fever resolved in 54% of patients treated with antibiotics cf 7% on antipyretics alone**

Patients without antibiotics showed shorter mean survival 8.7(9.9) c.f. 14.6(13.1)

Antibiotic use was common, mainly empirical, may cause fever to subside, antibiotics may be withheld in more poorly patients.
Antibiotics and advanced cancer – Survival

**Study**  Retrospective review of medical records (7/12)

**Patient**  105 patients with advanced cancer

**Setting**  20 bed palliative care unit in acute regional hospital Hong Kong.

**Findings**

- High frequency of infections (80.5%)
- 70 accounting for 120 infective episodes
- Most frequent sites – respiratory (53%), urinary (29%), skin (5%)

Antibiotics prescribed for 117 episodes (97.5%)

*Antibiotic therapy according to sensitivity*, pain, oral route and UTI were associated with a better survival.

Dyspnoea due to infection independent determinant of poor survival (relative risk 2.6 times c.f. non dyspnoeic pts), low albumin, chest infection, empirical therapy and iv antibiotics were associated with a poorer survival.

68 survived less than 14 days.
Infection in palliative care patients with advanced malignancy is a significant problem.

Common sites of infection: urinary, chest, skin.

Often infection is not recognised prior to admission to palliative care unit.

High frequency of antibiotic use in advanced malignancy in palliative care setting worldwide.
Patients often have antibiotics in last week or two of life.
Route more likely to be parenteral in acute settings.

Evidence that antibiotics improve symptoms particularly in certain infections eg UTI.

Evidence that antibiotics improve fever.

Outcome to antibiotic may vary according to palliative care phase.

Antibiotics are more effective if prescribed according to pathogen sensitivities, but are mainly prescribed empirically in palliative care setting.

Lack of evidence that antibiotics prolong survival at end of life.
Antibiotics and advanced dementia

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<tr>
<th>Study</th>
<th><strong>Prospective Cohort</strong> (From CASCADE study)</th>
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<td></td>
<td><em>followed for 18/12 or until death</em></td>
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<th>Patients</th>
<th>323 advanced dementia</th>
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<th>Setting</th>
<th>22 Nursing Homes Boston, USA</th>
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<th>Outcome measures – survival/comfort*</th>
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<th>Findings</th>
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225 suspected pneumonia episodes *(77% had CXR with 84% of those radiologically confirmed)*

| No antibiotics | 8.9% |
| Oral           | 55.1% |
| im             | 15.6% |
| iv/hospitalisation | 20.4% |

All antibiotic treatment improved survival c.f. no antibiotic treatment
All antibiotic treatment had worse comfort c.f. no antibiotic treatment

**Antibiotic treated suspected pneumonia in NH residents with advanced dementia is associated with prolonged survival, but not with improved comfort.**

*scored according to Symptom Management at End of Life in Dementia Scale*
### Study
Prospective observational study (34 month period)

### Patient
104 Alzheimer’s Dementia

### Setting
3x25 bedded hospital medical unit

Patients were assigned to levels of care after MDT discussion with family.

1. **No fever**
2. **Antibiotic**
   - History, Exam, bloods, urinalysis, urine culture, sputum culture, 3 blood cultures, CXR.
   - Broad spectrum antibiotics or antipyretics whilst awaiting cultures if stable.
3. **Palliative**
   - History, Exam but no investigations.
   - Antipyretics, opioids, pulmonary toilet, oxygen, oral fluids, “hospice like nursing care”

### Findings
75 patients developed 172 episodes of fever. Sites of infection chest, UTI, systemic

Patients with fever had more advanced dementia.

Antibiotic treatment **did not reduce duration of fever**

Incidence of fever was similar in Antibiotic Group c.f. Palliative Group.

In more severe dementia, antibiotics **did not prolong survival**

In less severe dementia, antibiotics **did prolong survival**.
Antibiotics and advanced dementia – conclusions from literature review

- Infection and antibiotic use is extensive in advanced dementia
- Antibiotics may extend survival in less severely affected patients but not in severely affected patients
- Common sites chest, urine, skin
- Not clear if antibiotics improve symptoms/fever
No specific guidance on antibiotic use in palliative care

Relevant NICE guidance:
(Search NICE Guidelines 157 results “antibiotics”)

**Infection Control:** Prevention of healthcare-associated infection in primary and community care 2003
*(update due March 2012)*

*COPD* 2004 *(updated June 2010)*

*Multiple Sclerosis* Nov 2003

*Dementia* March 2011

*Neutropenic Sepsis due August 2012*
No specific guidance on antibiotic use in palliative care

Relevant SIGN guidance:
(Search SIGN Guidelines 98 results “antibiotics”)

Management of suspected bacterial urinary tract infection in adults July 2006
Management of suspected bacterial urinary tract infection in adults July 2006
SIGN Guideline 88

Management of bacterial UTIs in patients with catheters

Antibiotic prophylaxis is not recommended for the prevention of UTIs in catheterised patients (may be considered if frequency/severity of infections impinge on function and wellbeing). Risk of increasing antibiotic resistance

In catheterised pts or pts with urinary stomas who present with fever look for localising or systemic features, exclude other sources, send off appropriate sample for culture to determine infecting organism, consider empirical antibiotics.

Do not use dipsticks to diagnose UTI in catheterised patients – symptomatic UTI cannot be differentiated by asymptomatic bacteriuria on urinalysis. Pyuria is common in catheterised pts and its level has no predictive value
Bacterial resistance…

“The patient in the next bed is highly infectious. Thank God for these curtains.”
Inappropriate use of broad spectrum antibiotics is associated with:

i) selection of antibiotic resistant bacteria  
   *e.g. ESBL producing Gram negative bacteria*

ii) acquiring MRSA

iii) inducing C.difficile infections

Livermore D M. Has the era of untreatable infections arrived? Journal of Antimicrobial Chemotherapy. 2009; 64 Suppl. 1: i29 – i36
Hawkey P and Jones A The changing epidemiology of resistance. Journal of Antimicrobial Chemotherapy. 2009; 64 Suppl. 1: i3 – i10
ANTIMICROBIAL STEWARDSHIP: “START SMART - THEN FOCUS”

Department of Health 2011

Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI)

Evidence based guidance for antimicrobial stewardship in secondary healthcare settings (England)
Do not start antibiotics in the absence of clinical evidence of bacterial infection.

If there is evidence/suspicion of bacterial infection, use local guidelines to initiate prompt effective antibiotic treatment.

Document on drug chart and in medical notes: clinical indication, duration or review date, route and dose.

Obtain cultures first.
ANTIMICROBIAL STEWARDSHIP: Then Focus is:

Review the clinical diagnosis and the continuing need for antibiotics by 48 hours and make a clear plan of action

The five Antimicrobial Prescribing Decision options

1. **STOP** antibiotics if there is no evidence of infection
2. **SWITCH** antibiotics from intravenous to oral
3. **CHANGE** antibiotics – ideally to a narrower spectrum – or broader if required
4. **CONTINUE** and review again at 72 hours
5. *(OPAT)* Outpatient Parenteral Antibiotic Therapy

It is essential that the review and subsequent decision is clearly documented in the medical notes.
Main Points

• Infection in palliative care patients is a significant problem
• Bacteria are developing antibiotic resistance faster than drug companies are developing new antibiotics
• Treatment should be individualised
• Antibiotics are more effective if prescribed according to pathogen sensitivities
• Antibiotic treatment for certain infections are particularly helpful for symptom control e.g. UTI
• Lack of evidence that antibiotics prolong survival at end of life
Audit Results

Dr Julie Langton
Antibiotic Audit

1. Questionnaire for ICN leads
   - Antibiotic Policies
   - MRSA and CDT Incidence over 1 year
   - MRSA and CDT policies
   - Infection control policies

2. Questionnaire for all ICN members
   - Prospective audit of antibiotic prescribing
   - Management of CDT and MRSA cases
Questionnaire 1
Questionnaire 1

• Responses from
  – Isle of Man
  – Liverpool
  – St Helens and Knowsley
  – Warrington
  – West Cheshire
  – Wirral
# Do you have an antibiotic policy?

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Do you have MRSA & CDT policies?

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# How many cases of MRSA have you had

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How many CDT cases have you had in the last 12 months?

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Do you have a formal system for ascertaining a patient's MRSA and CDT status prior to admission and communicating with health care professionals on discharge?

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Do you have information leaflets for patients & relatives about MRSA & CDT?

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<td>3</td>
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<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Details on training in ward cleaning and hand washing

<table>
<thead>
<tr>
<th>ICN</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hand washing and infection control in mandatory training. Housekeepers given guidelines re: infection control. Ward cleaning audited weekly.</td>
</tr>
<tr>
<td>2</td>
<td>Mandatory hand hygiene training for staff and volunteers. Infection control included in induction of all staff. Domestic, Maintenance team and Nursing schedules address ward cleaning.</td>
</tr>
<tr>
<td>3</td>
<td>Infection control in induction. Annual update for all clinical staff. Annual audit of hand washing. Cleaners have NVQ2 in cleaning and infection control.</td>
</tr>
</tbody>
</table>
## Details on training in ward cleaning and hand washing

<table>
<thead>
<tr>
<th>ICN</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Training once a year for medical and nursing staff</td>
</tr>
<tr>
<td>5</td>
<td>Annual mandatory NHS core learning modules for clinical staff in infection control e-learning modules for medical, non-clinical and domestic staff</td>
</tr>
</tbody>
</table>
| 6   | Regular hand washing audit  
Infection control training to be mandatory from 2012/2013 |
Summary of Results

• Majority of ICNS following antibiotic policies
• All policies updated within the last 2 years

• All ICNs have MRSA & CDT policies
• Low rates of hospice acquired MRSA and CDT

• Regular training in hand washing and ward cleaning throughout ICNs
Questionnaire 2
Questionnaire 2

- 111 completed
- January – March
- Prospective audit of patients initiated on or recently commenced on antibiotics
What is your role?

- Doctor with > 2 years experience in Palliative Medicine
- Doctor with < 2 years experience in Palliative Medicine
- Senior Nurse
- Nurse
- Pharmacist
Where do you work?
In which integrated clinical network do you work?
What is the sex of the patient?
What is the age of the patient?
What is the primary diagnosis?
In which clinical setting was the patient seen?
Are you initiating antibiotics or is the patient already taking them?
If already on antibiotics where were they commenced?
Is allergy status documented?
What is the goal of treatment?

- Symptomatic Relief:
  - No: [Value]
  - Yes: [Value]
  - Missing data: [Value]

- Cure of reversible infective symptoms:
  - No: [Value]
  - Yes: [Value]
  - Missing data: [Value]
What is the indication for antibiotic treatment?
What is the route of administration of antibiotics?
If iv therapy used, is there any evidence of reassessment after 24 hours and consideration of an oral stepdown?
If an iv cannula is used, is there evidence of...?
Have antibiotics been used for greater than 5 days? If so has there been any consideration of an oral stepdown?

- 4 patients had antibiotics > 5 days
- 1 patient considered for a PICC line
Is the antibiotic being used in accordance with local policy?
If the antibiotic is not being used in accordance with local policy, why is this the case?
Is the duration of antibiotic course or a review date documented?
Were samples sent to microbiology?

Were samples sent?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
<th>Missing data</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>30</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

Reasons why not sent

<table>
<thead>
<tr>
<th>Clinical Diagnosis</th>
<th>Unable to get sample</th>
<th>No reason given</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>12</td>
<td>10</td>
</tr>
</tbody>
</table>
Does the patient have CDT?

No CDT cases during data collection
Does the patient have MRSA?

4 patients with MRSA
- Patient 1 barrier nursing commenced but none of other questions filled in
- Patient 2 data completed appropriately
- Patient 3 MRSA positive but all other data missing
- Patient 4 all data completed appropriately
If MRSA positive, has the patient been isolated and barrier nursing commenced?
MRSA patients 2 and 4

- Skin colonisation
- Patient and family INFORMED of diagnosis of MRSA
- Patient and family NOT given information leaflets about MRSA

- Skin colonisation
- Patient and family INFORMED of diagnosis of MRSA
- Patient and family GIVEN information leaflets about MRSA
Summary of Results

• Antibiotic usage aimed at curing reversible infective symptoms more than pure symptomatic relief
• Respiratory and Urinary Tract Infections most commonly treated
• Poor documentation and regular review of cannulas
Summary of Results

- Rates of prescribing in accordance with local antibiotic policies can be improved
- Durations of antibiotic course or review dates need to be documented for every patient
- Many patients treated with antibiotics without microbiological specimens being sent
Proposed New Guidelines and Standards

Dr Clare Finnegan
Proposed Guidelines - General principles

• Consider treatment goals first
  – Symptomatic relief
  – Cure of reversible infective complications to maintain QOL

• The goals of treatment will determine the need for laboratory investigations.

• Samples should be taken for C&S to guide treatment where possible.

• It may be possible to discontinue antibiotics within 48 hours of good clinical response.

• Antibiotics should be reviewed after 48 hours
Proposed guidelines - General principles

• If a patient is unable to take oral antibiotics, a period of 24-48 hours of intravenous antibiotics may be indicated. [These can be administered within the hospice setting if the staff feel adequately trained.] Transfer to an acute unit is an alternative option.

• In patients who are unwell with recent chemotherapy, consider the possibility of assess for neutropenic sepsis
  – Patients with neutropenic sepsis must be discussed with the oncologists urgently
  – Locally agreed policy must be followed
  – Consider transfer to the acute setting
Proposed guidelines - General principles

- Hospital antibiotic policies vary
  - Locally agreed policy takes precedence over this guidance.
  - Choice of antibiotic should follow local policy.
  - Discuss with microbiologists if no response to treatment or troublesome side effects
- All antibiotics carry a risk of side effects and it is important to minimise that risk. E.g., gastrointestinal upsets are common with some antibiotics
- All staff to receive hand washing education
Proposed guidelines - Cellulitis

- If patient is systemically unwell, consider initial course of IV antibiotics before conversion to oral therapy
- If a patient has rapidly swelling cellulitis 24-48 hours iv therapy and then review
- If patient has lymphoedema and cellulitis, continued prophylactic low-dose antibiotics may be needed after treatment (penicillin V first-line)
Proposed guidelines – Chest Infection

- Send sputum for microbiology asap
- If no response to antibiotics and cultures are negative, consider atypical organisms e.g. chlamydia, mycoplasma
- Physiotherapy, bronchodilators, corticosteroids and hydration are also important
Proposed guidelines - Neutropenic Sepsis

• The management of neutropenic sepsis should follow regional guidelines. If clinically suspected commence treatment whilst awaiting FBC.

• Febrile neutropenia
  – T ≥ 37.9° on at least one occasion, plus
  – Neutrophil count ≤ 1 x 10⁹/l

• Neutropenic sepsis
  – As for febrile neutropenia, plus any of the following clinical features
    – Rigors
    – Confusion
    – Hyperventilation
    – Hypotension
Proposed guidelines – Neutropenic Sepsis

• Classically 7-10 days after chemotherapy
• All patients with suspected neutropenic fever should have full clinical assessment and FBC done
• Always discuss patient with medical oncologist
• If prolonged neutropenia consider antifungal prophylaxis
Proposed guidelines – Neutropenic Sepsis

• Patients are assigned to a risk index to decide appropriate treatment. Management protocols are determined by chemotherapy unit policy.
• If in doubt, patient is assumed to be high risk
• Patients may need urgent transfer to an acute unit.
• High risk patients get IV therapy (tazocin and gentamicin 1st line)
• Low risk patients get oral therapy and may also get early discharge if appropriate
Proposed guidelines - UTI

- Only 50% of episodes of dysuria are caused by bacterial infection of the bladder.
- Before commencing antibiotics:
  - Dipstick urine
  - If negative for leucocytes and nitrites, it is probably NOT an infection
  - If positive, send MSU
- No need to wait for MSU result before starting treatment
Proposed guidelines - UTI

• Consider vulvo-vaginal candidiasis if persistent symptoms and MSU with raised WCC and no growth

• Catheterised patients
  – Reserve antibiotics for symptoms of bladder wall inflammation and / or kidney infection.
  – Dipstix tests are unhelpful.
  – Routine use of antibiotics during catheter change is not indicated.
**Proposed Guidelines - Fungating wound odour**

- Metronidazole 400mg tds, reducing to 200mg tds after 7-10 days
- Topical metronidazole (0.8% metronidazole in aqueous base) should be restricted to patients for whom systemic metronidazole is ineffective
- For medical and surgical wounds that look infected the first choice is flucloxacillin.
Proposed Guidelines - MRSA

- Staff education regarding hand washing and high standards of ward cleanliness is priority
- There is no definitive evidence on the long term benefits of decolonisation
- If MRSA infection (e.g. bacteraemia, wound infection) consider seeking microbiology advice
- The treatments vary in efficacy, expense and potential for causing side effects. There is reason for remaining optimistic when talking to patients and carers about the likely success of treatment and to emphasize the benign nature of MRSA in patients without wounds or intravascular devices.
- Leaflets on MRSA should be provided
- Patients with MRSA bacteraemia may need transfer to acute unit
- Glycopeptides antimicrobials remain mainstay of treatment e.g. vancomycin or teicoplanin
Proposed Guidelines-Clostridium Difficile

- Prevention is better than cure
- Staff and visitors should ensure strict personal hygiene is observed. Hands to be washed with soap and water as alcohol washes do not kill the spores
- Patients should be isolated. Isolation should be considered for patients who are faecally incontinent
- The use of antibiotics should be rationalised
Proposed Guidelines-Clostridium Difficile

- Patients may require supportive care with hydration and correction if electrolyte imbalance depending on their clinical condition. Good nutrition should be centered on a balanced diet which includes soluble fibre to sustain colonic colonisation by friendly bacteria (probiotic approach)
- No requirement to repeat stool culture at end of treatment
Proposed Standards

1. Specimens for culture and sensitivity should be sent to microbiology before the initiation of antibiotic treatment whenever possible. [Grade D]
2. Antibiotic guidelines should be updated every 2-3 1-2 years. [Grade D]
3. Any known allergies to antibiotics should be clearly recorded in the patients notes and on the medication chart. [Grade D]
4. Inappropriate prescribing of antibiotics should be avoided. [Grade D]

Antibiotic prescribing should follow the SMART FOCUS approach.
**SMART then FOCUS**

- Antibiotics should only be commenced when there is evidence of clinical infection.

- Use local guidelines to guide effective antibiotic treatment.

- Obtain cultures first

- Document on drug chart and in medical notes:
  - clinical indication
  - duration or review date
  - route
  - dose

- Review clinical diagnosis and the continuing need for antibiotics by 48 hours and make a “Antimicrobial Prescribing Decision”
  1. Stop
  2. Switch IV to Oral
  3. Change
  4. Continue
  5. Outpatient Parenteral Antibiotic Therapy (OPAT).

- the review and decision is documented in the medical notes.
Proposed Standards

5. All palliative care inpatient units should have a MRSA policy. [Grade D]
6. All palliative care inpatient units should have a C Difficile policy.
7. All staff should be educated about the importance of ward cleaning and hand washing. [Grade D]
8. Information leaflets on MRSA and C.Difficile should be available for all patients/ families. [Grade D]
9. Any patient with diarrhoea and known antibiotic use should have a stool sample sent urgently for screening for C. difficile toxin. [Grade B]
10. In patients with Clostridium difficile there should be an urgent review / discontinuation of any antibiotics prescribed. [Grade B]
Proposed Standards

11. Patients with Clostridium difficile infection should be isolated and barrier nursing / gloves used where possible. [Grade B]
12. Intravenous therapy should be reviewed every 24 hours with a view to oral step-down at the earliest opportunity. [Grade D]
13. Where intravenous antibiotic therapy is anticipated to be required for >5 days, early consideration of placement of a midline or PICC line should be considered for patient comfort and the possibility of home IV therapy, [Grade D]
14. Cannulae should be dated and regularly reviewed. Site and date of insertion should be recorded in notes and on cannula.
External Expert

Dr Godfrey Smith, Consultant Microbiologist, Royal Liverpool and Broadgreen University Hospital Trust
Thank you
Date of Next Meeting
Thursday 3rd April 2012
Topic: Review Meeting