Infection Control and cancer a perfect storm

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This poster highlights some of the issues raised in session 18B

Antibiotic resistance poses a threat to everyone, but cancer patients are at particular risk
Surgery, radiation, chemotherapy, and transplant leave a patient more vulnerable to infection than a healthy adult of similar age.
Antibiotics have revolutionized cancer treatment by enabling the use of more aggressive therapies. This has led to dramatically higher survival rates. For this medically vulnerable group-and for society as a whole-the loss of effective antibiotics would have dire ramifications

“Never underestimate the speed in which a haematology patient can become unwell. I’ve had patients go from fine to calling the crash team 15 minutes later

Jane Howes, CNS PP Haematology

The perfect storm:
Hospital
• Collection of vulnerable patients
• Many overseas colonised patients

Treatments
• Chemotherapy, Radiation, Surgery, Transplant
• Leucopenia - inability to mount defence
• Mucositis - risk of translocation
• Diarrhoea - efficient means of spread

Problems and Solutions
Chemotherapy causes mucositis – damage to the lining of the gut.
Consider reduced intensity – Mini transplant?

Flora from the gut can translocate into the blood stream leading to bacteraemia
Consider Faecal Microbiota Transplant

Chemotherapy and mucositis result in profuse diarrhoea requiring thorough environmental hygiene
Consider UV or HPV room decontamination

Reliance on Antibiotics – prophylaxis and treatment increasing resistance.
Essential antimicrobial stewardship rounds

Chemotherapy causes reduced immunity so unable to mount a response.
Consider novel antimicrobials such as Ceftazidime-Avibactam for extreme resistance

Infection risks and considerations

Invasive Devices – Vascular access, feeding tubes, IUCs

Isolation facilities - ensuite facilities, hand hygiene, prolonged isolation

Ventilation - HEPA Filtration, Ribavarin and pentamidine administration

Food Restrictions- Salmonella, Campylobacter, Listeriosis, Rota

Water Safety - Legionella, Pseudomonas

Air conditioning units - gram negative organisms

Building works - Brick dust, cleaning
Hand Hygiene – staff engagement
Personal hygiene – reduce colonisation with harmful flora

Poor Nutrition – high metabolic rate

Mix of patients - from UK and Overseas. Tertiary referral

Treatment for Cancer including chemotherapy, radiation and stem cell transplant

Graft Versus Host Disease (GVHD) from allogeneic (donor) transplant. T Cells from donor graft attack host cells. Skin rashes, diarrhoea, sickness, loss of appetite and jaundice.

Conclusion
IPC in cancer care poses lots of challenges and more than cross infection from others or the environment
Cancer treatments provide the perfect storm to spread resistant organisms
Good infection prevention and control is fundamental to good cancer care and preventing resistance
If we don’t mind our antibiotics then we may not have any cancer care in the future...