INFECTION CONTROL STAFF FACT SHEET

Extended Spectrum Beta Lactamase (ESBL) producing organisms

WHAT ARE THEY?

- ESBL's (extended spectrum beta lactamases) are enzymes that may be produced by Gram negative bacteria. They were first reported in 1983.
- The bacteria have become resistant to beta-lactam antibiotics, by their ability to produce an enzyme (beta-lactamase) which can break down the antibiotics (eg. penicillins and cephalosporins).
- ESBL producing organisms not only have the ability to break down beta-lactam antibiotics but they are also able to transfer these resistance enzymes to other microorganisms via plasmids.
- The bacteria may also be resistant to other antibiotics such as aminoglycosides (eg. gentamycin and tobramycin) and quinolones (eg. ciprofloxacin).
- The most common ESBL producing organisms include *Klebsiella spp, Enterobacter spp, Acinetobacter spp* and *Escherichia coli*.

HOW ARE THEY SPREAD?

- ESBL producing organisms usually colonise the bowel without causing signs of infection.
- They are capable of causing infections either locally (eg. wounds, UTI) or systemically (bacteraemia / septicaemia).
- They are spread by the faecal oral route and by contact via the hands of health care workers or contaminated items or equipment.

WHAT ARE THE RISK FACTORS?

- Recent patient in ICU / NICU (ET tubes, central lines)
- Immunocompromised
- Post transplant
- Premature babies
- Frequent / long term antibiotic therapy
- Indwelling urinary catheters
- Surgical procedures

HOW ARE THEY DIAGNOSED?

- Detection of ESBL producing organisms by Microbiology Laboratory
- Noting increasing rates of treatment failure with extended-spectrum cephalosporins.

Developed by Karen Haussen, Infection Control Link Nurse; Paediatric Surgery

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HOW CAN STAFF HELP PREVENT TRANSMISSION?

To prevent the spread of these organisms:

- Patients should be isolated in a single room or cohorted with other patients colonised or infected with the same ESBL producing organism.
- Hand hygiene with soap and water or an alcohol hand based gel, prior to and after attending to patients is essential.
- The wearing of gown and gloves for direct patient contact and masks/goggles for standard precautions is essential.
- Parents and visitors should be educated in precautions to be taken.
- For more detailed information regarding ward management refer to "Management of patients colonised or infected with multi-resistant organisms" Index no: 4/04

WHAT HAPPENS WHEN THE PATIENT IS READMITTED OR HAS APPOINTMENTS?

- It is important that patients are aware that they need to advise the doctors and nursing staff of their ESBL history on subsequent visits.
- They may need to be isolated again and further swabs taken for clearance.

HOW DO STAFF KNOW IF A PATIENT HAS AN ESBL PRODUCING ORGANISM?

- If a patient has an ESBL there will be a MRO positive notation on the patient's Clinical Summary / Problem List Sheet (MR1) and an Administration Alert on the Homer system.
- If the ESBL producing organism is identified whilst an inpatient then the ward and the treating medical officer will be notified by the Infection Control Team.

WHERE CAN I GET FURTHER INFORMATION?

For further information contact the Infection Control Unit (☎ 81616388) or ask the Infection Control Link Nurse/Midwife in your area.

REFERENCES

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