

ESBL / Multi-Resistant Gram Negative Rods

Key Points

ESBLs can be present in the gut of patients without staff being aware, therefore the application of Standard Infection Control Precautions at all times is essential to control these multi-resistant bacteria

Hand decontamination before and after every patient contact is the most important step in preventing transmission

The risk of transmission is increased if a patient has diarrhoea or a urinary catheter in situ

Definitions

Multi-resistant gram negative rods: A variety of gram negative bacteria which have extensive resistance to common antibiotics. Examples include ESBL producing *E. Coli* and *Klebsiella species*, *Pseudomonas aeruginosa*, *Actinetobacter baumannii* and *Stenotrophomonas maltophilia*.

ESBL: Extended Spectrum Beta-Lactamase.

Background

ESBLs are enzymes produced by some species of gram negative bacteria such as *E. Coli* and *Klebsiella*. These bacteria are predominantly bowel organisms. ESBLs have the ability to destroy a wide range of Beta-Lactam antibiotics including common agents such as Co-amoxiclav, Amoxicillin and Cephalosporins. Organisms with an ESBL often carry resistance to other classes of antibiotics such as Ciprofloxacin and Trimethoprim. These first-line antibiotics are no longer effective for infections caused by ESBL-producing bacteria.

Notes on Infections with ESBL

Infections caused by ESBL producing gram negative bacteria are similar to those caused by antibiotic sensitive E. coli. They include urinary tract infection, wound infections, abdominal infection and blood stream infection (bacteraemia).

ESBLs are not more virulent than sensitive strains.

Treatment of ESBL infection should be directed by clinical need and antibiotic susceptibility. Advice may be sought from the Microbiologist.

Eradication of colonization should not be attempted.

Guidance

Infection Prevention & Control Measures

- **Hand Hygiene.** Decontaminate hands (with soap and water or an alcohol based sanitiser) before and after every patient contact and between dirty and clean tasks on the same patient.
- **Gloves and Aprons.** Use gloves & aprons for all contact with patients, their environment, and when dealing with body fluids. Perform hand hygiene after removal of gloves and aprons.
- **Isolation.** Care for patients in a single room. If single rooms are limited due to other infectious cases, risk assess as outlined in the Isolation guideline.
- **Cleaning.** Special attention should be given to cleaning equipment and surfaces contaminated with faeces e.g. commodes and toilet seats.
 - Do not share patient care equipment, where this is essential ensure decontamination between patients
 - Clean and disinfect equipment immediately following patient use
 - Full environmental clean of the bed space following patient discharge
- **Visitors.** Visitors need not wear protective clothing, but should be advised to wash their hands or use alcohol handrub before entering or leaving the room. There is no evidence that healthy people, including staff and visitors, are at an increased risk of acquiring infections caused by ESBLs.

Use Information Leaflets

- Patients or their relatives can be given an information leaflet explaining about ESBL and Multi-resistant gram negative rods.

Patient Transfer / Discharge

- Information regarding ESBL status should be documented on the patient transfer form and communicated verbally to the receiving unit prior to transfer.
- Please inform the Infection prevention and control team (IPCT) prior to transfer to enable liaison with the IPCT at the receiving hospital.
- No special precautions are needed for ambulance transport. Ambulance crew should use normal procedures for handling any waste and perform hand hygiene between patients.

Community / Non-hospital Setting

- Information regarding ESBL status should be documented in the GP discharge letter and District nurse referrals.
- No special precautions are required at home.
- Usual personal hygiene and household cleaning are sufficient and patients should be reminded of the importance of hand hygiene.
- Restriction of activities or visitors at home is not necessary.

References

1. Health Protection Agency. General advice on Infections such as ESBL: available at: <http://www.hpa.org.uk/> (look at Infectious diseases tab, then 'Infections A to Z' ESBL is under 'E'.)