

ANTIBIOTIC PROPHYLAXIS IN ENT SURGERY

1. BACKGROUND

It is generally agreed that prophylactic antibiotics are necessary for the prevention of superficial and deep surgical site infections (SSI) and infections of prosthetic implants. The role of prophylactic antibiotics is to inhibit growth of contaminating bacteria and their adherence to prosthetic implants, thus reducing risk of infection. This use of antibiotics should be in a manner that is supported by evidence of effectiveness and minimises effect on the patient's normal bacterial flora thus reducing chances of development of resistant bacteria including MRSA. A rationale choice and duration of antibiotics also prevents development of Clostridium difficile associated gut pathology.

2. AIMS OF THIS POLICY

To look for available evidence for antibiotic prophylaxis in ENT surgery and along with local Microbiology knowledge about prevalent bacterial flora, draw up a policy that will rationalise use of antibiotics in ENT surgical prophylaxis.

Refer annex for categorisation of surgical procedures and recommendation criteria

EAR SURGERY (Px – Prophylaxis)

Type	Procedure	P x	Antibiotics	Ref
All Types of reconstructive tympanoplasties- (Clean surgery)	Myringoplasty Stapedotomy Stapedectomy	No		(1)
All types of canal wall up procedures (with dry mid ear)- (Clean surgery)	Including facial nerve decompression	No		(1)
Chronic Otitis media. (Clean-contam. surgery)	Any (with or without cholesteotoma)	No		(1,3)
Ventilation tube Insertion	Dry ear Infected ear	No Yes	At induction: single dose Coamoxiclav. Cotrimoxazole-if allergic to penicillin	
BAHA		Yes	At induction : single dose of Cefuroxime. Cotrimoxazole - if allergic to penicillin	
Cochlear Implant	Intact ear drum Perforated ear drum	Yes Yes	At induction : single dose of Cefuroxime. Cotrimoxazole – if allergic to penicillin Single dose of Meropenem 1g, 1 hour before surgery	(6)
Mastoidectomy	In acute mastoiditis	Yes	At induction: single dose of Cefuroxime+Metronidazole (MZ), + 3 days post op. Cotrimoxazole if allergic to penicillin + Metronidazole	

There is no strong evidence that the use of antibiotics in clean and clean-contaminated ear surgery is helpful in reducing postoperative complications such as wound infection, discharge from the outer ear canal, labyrinthitis and graft failure (2)

HEAD AND NECK SURGERY (Px - Prophylaxis; MZ – Metronidazole)

Type	Procedure	Px	Antibiotics	Ref
Tonsillectomy		No		(1)
Clean Head and Neck Surgery	Laser Therapy Bx laryngopharynx Bx oesophagus Excision neck lumps Excision lymph nodes Tracheostomy Thyroglossal cyst	All No		(1)
Contaminated/clean-contaminated Head and Neck surgery	Laryngectomy Pharyngolaryngectomy Radical neck dissection	All Yes	At induction: one dose Cefuroxime+Metronidazole, 2 doses post op. Clindamycin if pen allergic, MZ not required	(1)
Pituitary Resection		Yes	At induction :one dose of Cefuroxime+Metronidazole, Clindamycin if pen allergic, MZ not required	

NOSE OR SINUS SURGERY (Px – Prophylaxis)

Type	Procedure	Px	Antibiotics	Ref
Reduction of nasal fractures	fractures	No		(1)
Septoplasty		No		(1)
Septorhinoplasty		No		(1)
Intranasal polypectomy		No		(1)
SMDITS(submucous diathermy to inferior turbinates)		No		(1)
Trimming of inferior turbinates		No		(1)
Endoscopic sinus surgery and Antral puncture		No	If grossly infected speak to microbiologist	
Epistaxis Anterior	gauze packing	Yes	Only if gauze pack is left in for more than 24 hours- Clindamycin for 3 days	(9)
Posterior	balloon/foleys	No		

- If there is evidence of gross infection at surgery then same antibiotics may be prolonged for 3-5 days post op. (7,8)
- If the patient has been in hospital for long duration and needs repeat surgery, please contact a Microbiologist to review latest specimen results to suggest right antibiotic prophylaxis for surgical procedure.

REFERENCES

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ANNEX

RISK FACTORS FOR SURGICAL SITE INFECTIONS

FACTORS AFFECTING THE INCIDENCE OF SURGICAL SITE INFECTION

A. CLASSIFICATION OF OPERATION

Operations can be categorised into four classes with an increasing incidence of bacterial contamination and subsequent incidence of postoperative infection.

Clean: Operations in which no inflammation is encountered and the respiratory, alimentary or genitourinary tracts are not entered. There is no break in aseptic operating theatre technique.

Clean-contaminated: Operations in which the respiratory, alimentary or genitourinary tracts are entered but without significant spillage.

Contaminated: Operations where acute inflammation (without pus) is encountered, or where there is visible contamination of the wound. Examples include gross

spillage from a hollow viscus during the operation or compound/open injuries operated on within four hours.

Dirty: Operations in the presence of pus, where there is a previously perforated hollow viscus, or compound/open injuries more than four hours old.

B. RECOMMENDATIONS

Four different recommendations have been made regarding surgical antibiotic prophylaxis:

Highly recommended: prophylaxis unequivocally reduces major morbidity, reduces hospital costs and is likely to decrease overall consumption of antibiotics

Recommended: prophylaxis reduces short-term morbidity but there are no RCTs that prove that prophylaxis reduces the risk of mortality or long-term morbidity. However, prophylaxis is highly likely to reduce major morbidity, reduce hospital costs and may decrease overall consumption of antibiotics

Recommended but local policy makers may identify exceptions: prophylaxis is recommended for all patients, but local policy makers may wish to identify exceptions, as prophylaxis may not reduce hospital costs and could increase consumption of antibiotics, especially if given to patients at low risk of infection. Any local policy that recommends restriction of prophylaxis to “high-risk” patients must specify and justify the threshold of risk. Moreover, such a policy requires continuous documentation of wound infection rates in order to provide evidence that the risk of surgical site infection in patients who do not receive prophylaxis is below the specified risk threshold. In addition, for clean-contaminated procedures or procedures involving insertion of prosthetic device, evidence for the clinical effectiveness of surgical antibiotic prophylaxis is lacking. This is either because trials have not been done or have been done with such small numbers of patients¹⁵ that important treatment effects cannot be excluded.

A local policy that does not recommend prophylaxis for these operations can be justified on the basis that there is no conclusive evidence of effectiveness. However, local policy makers must be aware that their policy represents a minority of professional opinion.

Not recommended: prophylaxis has not been proven to be clinically effective and as the consequences of infection are short-term morbidity, it is likely to increase hospital antibiotic consumption for little clinical benefit.

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