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[Intervention Review]

Systemic antimicrobial prophylaxis for percutaneous endoscopic gastrostomy

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ABSTRACT

Background

Percutaneous endoscopic gastrostomy (PEG) is a surgical procedure performed to maintain nutrition in the short- or long-term. During the procedure, a feeding tube that delivers either a liquid diet, or medication, via a clean or sterile delivery system, is placed surgically through the anterior abdominal wall. Those undergoing PEG tube placement are often vulnerable to infection because of age, compromised nutritional intake, immunosuppression, or underlying disease processes such as malignancy and diabetes mellitus. The increasing incidence of methicillin-resistant *Staphylococcus aureus* (MRSA) contributes both an additional risk to the placement procedure, and to the debate surrounding antibiotic prophylaxis for PEG tube placement. The aim of surgical antimicrobial prophylaxis is to establish a bactericidal concentration of an antimicrobial drug in the patient's serum and tissues, via a brief course of an appropriate agent, by the time of PEG tube placement in order to prevent any peristomal infections that might result from the procedure.

Objectives

To establish whether prophylactic use of systemic antimicrobials reduces the risk of peristomal infection in people undergoing placement of percutaneous endoscopic gastrostomy tubes.

Search methods

In August 2013, for this third update, we searched the Cochrane Wounds Group Specialised Register; The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*); Ovid Medline; Ovid Medline (In-Process & Other Non-Indexed Citations); Ovid Embase; and EBSCO CINAHL.

Selection criteria

Randomised controlled trials (RCTs) evaluating the use of prophylactic antimicrobials during PEG tube placement, with no restrictions regarding language of publication, date of publication, or publication status. Both review authors independently selected studies.

Data collection and analysis

Both review authors independently extracted data and assessed study quality. Meta-analyses were performed where appropriate.

Main results

One new trial was identified and included in this update, bringing the total to 13 eligible RCTs, with a total of 1637 patients. All trials reported peristomal infection as an outcome. A pooled analysis of 12 trials resulted in a statistically significant reduction in the incidence of peristomal infection with prophylactic antibiotics (1271 patients pooled: OR 0.36, 95% CI 0.26 to 0.50). The newly identified trial compared IV antibiotics with antibiotics via PEG and could not be included in the meta-analysis.

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Authors' conclusions

Administration of systemic prophylactic antibiotics for PEG tube placement reduces peristomal infection.

PLAIN LANGUAGE SUMMARY

Antibiotics given before the placement of a percutaneous endoscopic gastrostomy (PEG) tube with the aim of reducing infection at the site

Percutaneous endoscopic gastrostomy (PEG) is a surgical procedure for inserting a feeding tube that goes into the stomach (through the abdomen) of patients who cannot take food by mouth. Antibiotics are often given intravenously before this surgical procedure, as a precaution to reduce the risk of infection at the site of operation. Thirteen research studies were included in this review, and they confirm that those people who were given antibiotics when their PEG tube was inserted were less likely to suffer an infection at the site than those who were not given antibiotics.

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