



# MICROBIOLOGY AND BEST EMPIRIC ANTIMICROBIAL THERAPY IN ORGAN/SPACE SURGICAL SITE INFECTION AFTER ELECTIVE COLORECTAL SURGERY

M. Puyada<sup>1</sup>, M. Sadurní<sup>1</sup>, A. Benítez-cano<sup>1</sup>, J. Carazo<sup>1</sup>, K. Rodríguez<sup>1</sup>, C. García<sup>1</sup>  
<sup>1</sup>Parc de Salut Mar - Barcelona (Spain)

## BACKGROUND AND GOAL OF STUDY

Organ/space surgical site infections (osSSI) as anastomotic leak and intraabdominal abscess are an important cause of morbidity after elective colorectal surgery.

A prompt empiric antimicrobial therapy must be started in order to improve prognosis.

A continuous knowledge of local flora is important to establish an adequate therapeutic strategy. An empiric antibiotic treatment which covers more than 90% of local pathogens is recommended.

The goal of the study is to determine the microbiology of organ/space SSI after elective colorectal surgery and to assess the best empiric antimicrobial therapy.

## MATERIALS AND METHODS

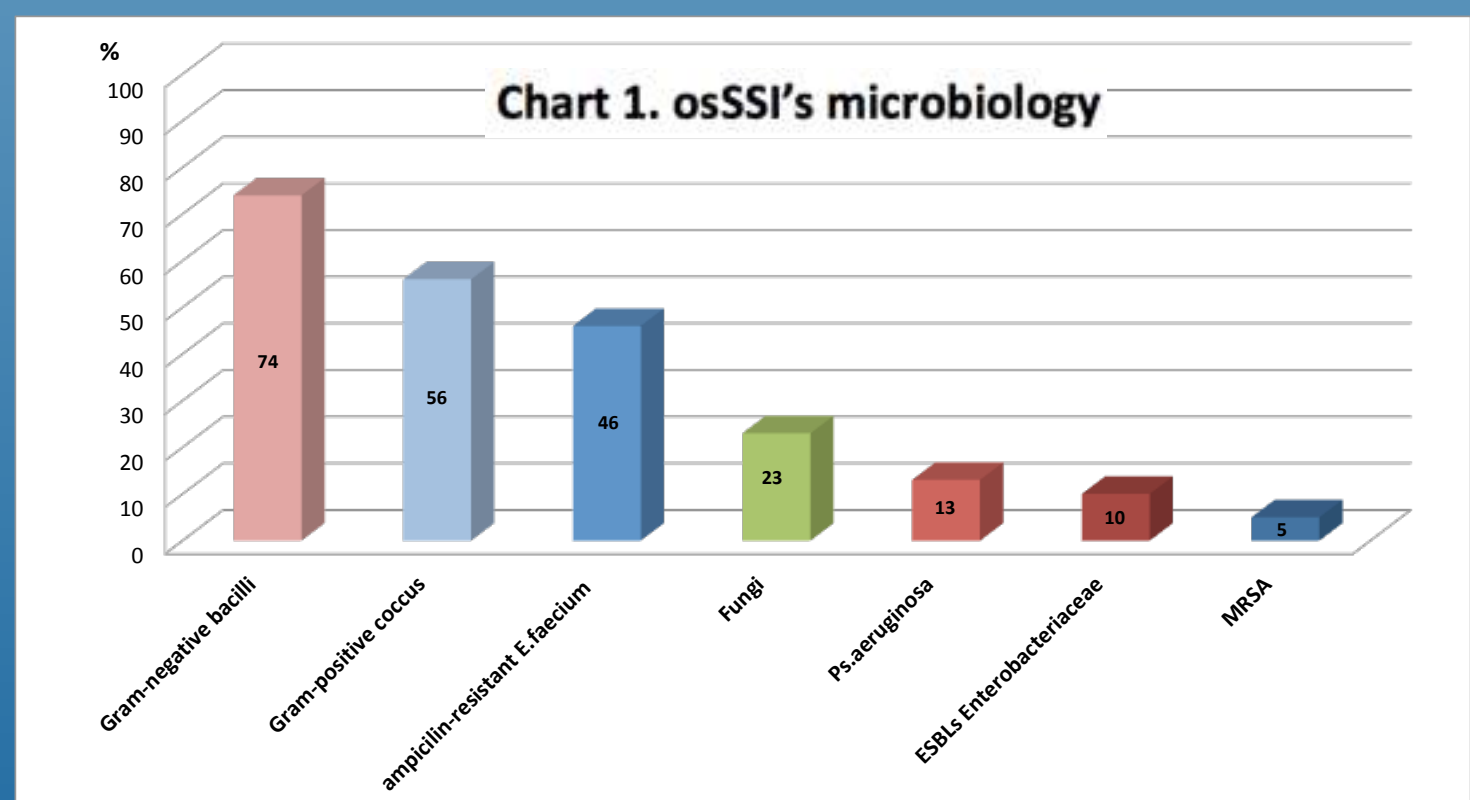
We retrospectively analyzed the incidence of osSSI after elective colorectal surgery in a tertiary hospital (January 2014/December 2016). Most important variables analyzed were: type of pathogens isolated (Gram-negative bacilli, extended-spectrum  $\beta$ -lactamases-producing Enterobacteriaceae, *Ps.aeruginosa*, Gram-positive coccus, ampicillin-resistant *E. faecium*, methicillin-resistant *S. aureus* and fungi) and susceptibility to most common empiric antimicrobial therapies used in our institution: Amoxicillin/clavulanic acid (AC), Piperacillin/Tazobactam (PTZ), Imipenem (I), Meropenem + Linezolid (ML) and Meropenem + Linezolid + Fluconazole (MLF)

## RESULTS AND DISCUSSION

49 patients with osSSI were included. 39 patients had positive cultures. All cultures were polymicrobial. Isolated pathogens were: 74% Gram-negative bacilli, 54% Gram-positive coccus, 46% ampicillin-resistant *E. faecium*, 23% fungi, 13% *Ps.aeruginosa*, 10% extended-spectrum  $\beta$ -lactamases-producing Enterobacteriaceae and 5% methicillin-resistant *S. aureus*. Adequate treatment would be achieved in 92% of patients with MLF combination, 80.5% with ML, 33% with I or PTZ and just 23% with AC

**Table 1. Suitability of empiric antimicrobial therapies**

Empiric antimicrobial therapy	Properly treated patients (n)	Percentage (%)
Amoxicillin/clavulanic acid (AC)	9	23
Piperacillin/Tazobactam (PTZ)	13	33
Imipenem (I)	13	33
Meropenem + Linezolid (ML)	31	80.5
Meropenem + Linezolid + Fluconazole (MLF)	36	92



## CONCLUSION(S)

Most common isolated pathogens in osSSI after colorectal surgery were Gram-negative bacilli and Gram-positive coccus. These results are consistent with previous studies.

High prevalence of ampicillin-resistant *E. faecium* and fungi found in our population are consistent with nosocomial origin of osSSI, and makes empiric treatment with MLF the most adequate.

Based in our results, a wide spectrum empiric covering fungi and ampicillin-resistant *E. faecium* should be considered.