

INTERNATIONAL SURVEY OF CLINICAL PRACTICE RE PERIOPERATIVE ANTIBIOTIC PROPHYLAXIS IN ORTHOPAEDIC SURGERY

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INTRODUCTION

Increasing antibiotic resistancy and higher patient infection risks have raised concerns about the adequacy of current peri-operative antibiotic prophylaxis (PAP) strategies. The example UK where dual PAP combinations are often preferred has shown that different philosophies exist.

METHODS

In an anonymous web-based survey, 18 questions were submitted to >1000 registered users of the PRO-IMPLANT Foundation (www-pro-implant-foundation.org) in February 2017, with 2 reminders in March 2017.

AIM

To determine and compare the current clinical PAP practice in arthroplasty surgery in university and community hospitals in Europe.

RESULTS

A total of 358 questionnaires were completed and analysed. Per country, the majority of answers were received from Germany (DE) (n=141), followed by Spain (ES) (n=38) and Switzerland (CH) (n=21). 249 (70%) questionnaires were filled out by surgeons, 85 (24%) by infectious disease specialists (IDS) and microbiologists (MiBi). Most participants work in university or larger community hospitals (>80%) with larger numbers of annually performed arthroplasties. 58% perform more than 300 procedures per year.

THE FOLLOWING RESULTS WERE OBTAINED IN DETAIL:
Question: Which is your standard and reserve PAP regimen in the hospital?

Fig. 1: preferred standard PAP

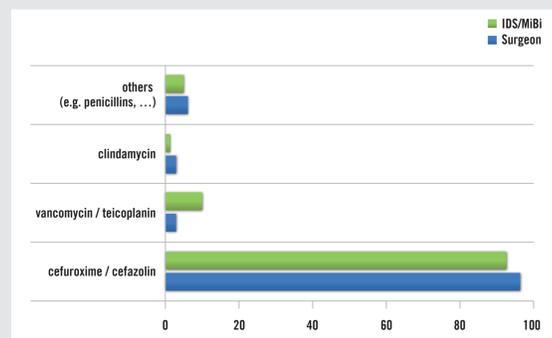
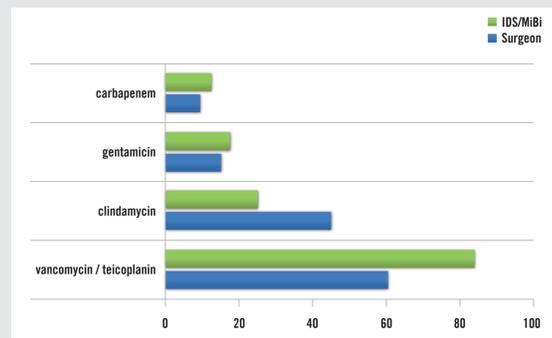


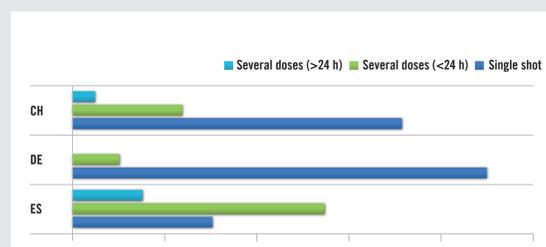
Fig. 2: reserve PAP



Cephalosporins were most widely used in routine PAP (reported by 94% of all survey participants). First alternative antibiotic of choice were glycopeptides in 65% (in Spain in 85%), followed by clindamycin in 40% and carbapenems in 11% of cases. IDS/MiBi show higher preference for glycopeptides than surgeons.

Question: Which is your preferred dosing regimen?

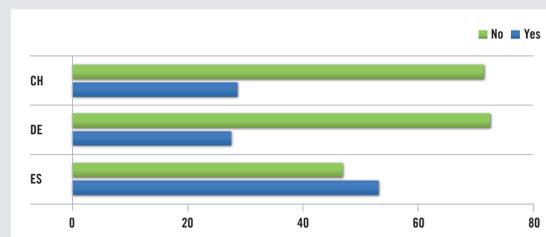
Fig. 3: PAP duration



Single shot prophylaxis was reported by 62% (in DE & CH more than 70%). In Spain, however, most participants (70%) favor multiple doses (55% for 24 h and 15% for 72 h)

Question: Do you "customize" PAP in response to a changing bacterial etiology?

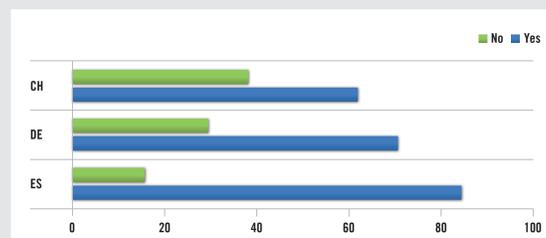
Fig. 4: Adaptation of PAP – bacterial pathogen



Customization of PAP in response to bacterial resistance (MRSA, GNB) was reported by 33% of all participants. This trend was higher in Spain (53%).

Question: Do you "customize" PAP according to higher infections risks?

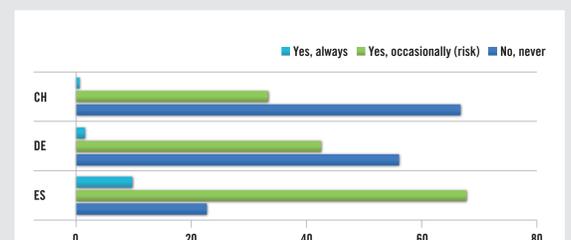
Fig. 5: Adaptation of PAP – procedure or patient-related infection risk



Customization of PAP because of higher infections risks (either procedure- or patient-related) was reported by 72% of all participants (in Spain 84%). Main reasons were: septic revisions (80%), long duration of surgery (65%), unclear MRSA status (51%) - data not shown.

Question: Do you use a combination of 2 antibiotics for PAP (a dual PAP-regimen)?

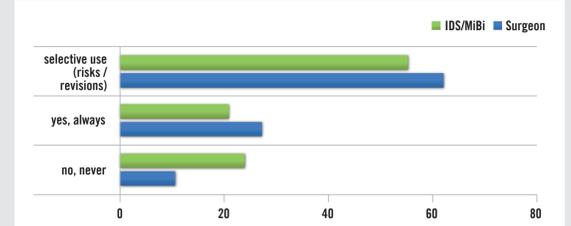
Fig. 6: Use of dual PAP



A dual PAP was considered in determined risk situations in 51% (occasional & always use). It was higher in Spain (77%). A combination of glycopeptide and cephalosporin was reported (57%) to be then preferred (data not shown).

Question: Do you use a combination of systemic & local antibiotics for prophylaxis?

Fig. 7: Additional use of local antibiotics



A combination of systemic & local AB was reported by 87%, at least in risk patients and/or in septic revision surgery (selective and always use). Antibiotic-loaded bone cement (ALBC) with gentamicin was preferred (92%). Among ALBC users 50% differentiate between low (0.5–1 g AB) & high dose (≥2 g AB) in ALBC. The latter is used in risk patients (16%) and/or septic revision surgeries (34%) (data not shown)

CONCLUSION

A standard PAP still prevails. However, deviations from standard (PAP customization/dual antibiotics) are frequently performed in response to antimicrobial resistance and higher infection risks. This trend was more pronounced in Spain, which may be explained by a higher prevalence of multi-resistant organisms.

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