The Prontoderm® system

RISK REDUCTION OF SSI BY PREOPERATIVE BODY WASH

The colonization of Multi-Drug-Resistant Organisms (MDRO) are an increasing problem in the health care system and have a serious impact on the community. This colonization has to be avoided at all cost to prevent severe problems such as infection, especially prior to surgical interventions, in catheterised patients, or in immunosuppressed patients.

The aim is to reduce the incidence of such infections through body cleansing with the Prontoderm® product family.

Several clinical studies have shown that cleansing with an anti-microbial agent the night and the morning before the planned operation can reduce the incidence of post-operative surgical site infections.[10]

Variable treatment concepts with Prontoderm®

Prontoderm® Solution, Prontoderm® Nasal Gel and ProntOral®	Prontoderm® Wipes, Prontoderm® Nasal Gel and ProntOral®	Prontoderm® Foam, Prontoderm® Nasal Gel and ProntOral®	Prontoderm® Shower Gel, Prontoderm® Nasal Gel and ProntOral®
			
Skin ✓	Skin ✓	Skin ✓	Skin ✓
Nose ✓	Nose ✓	Nose ✓	Nose ✓
Mouth ✓	Mouth ✓	Mouth ✓	Mouth ✓

Advantages of Prontoderm®

- Inhibition of MDRO growth, spreading and transmission
- Bactericidal efficacy for MRSA, ESBL/ESCR and VRE proven by EN13727
- Proven non-resistance to MRSA strains
- Leave-on, antimicrobial barrier effect for up to 24 hours
- Outstanding skin tolerance, dermatologically tested
- Available as solution, wipes, nasal gel, foam, shower gel and mouth rinse solution

10) Zywiel MB et al. Advance pre-operative chlorhexidine reduces the incidence of surgical site infections in knee arthroplasty. Int Orthop. 2011 Jul; 35(7):1001–1006.

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SHARING EXPERTISE

Bactericidal efficacy against MRSA, ESBL/ESCR and VRE proven by EN13727

MDRO decolonisation

Prontoderm®

RISK REDUCTION OF SURGICAL SITE INFECTION BY PREOPERATIVE BODY WASH

SURGICAL SITE INFECTION

A MAJOR RISK IN ANY SURGERY

Surgical site infections (SSIs) are one of the most important causes of healthcare-associated infections (HCAIs) and remain a severe complication after a surgery.[1]

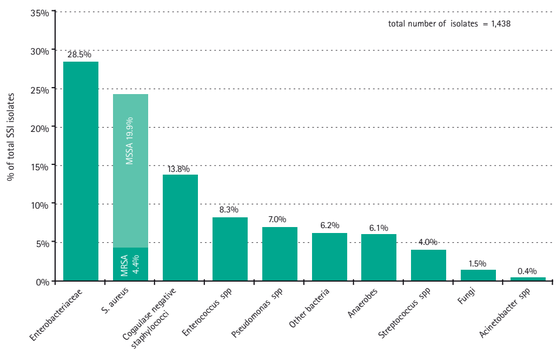
Every surgical site infection leads to economic and human burden:

- SSI can double the length of time a patient stays in hospital[2]
- Additional costs attributable to SSI
- Tragedy for each patients with enormous psychosocial stress

In Germany for example 25.7 % of all nosocomial infections (prevalence HAI 5.1 %) were postoperative wound infections.[3]

Relevant organisms reported as causing SSI[4]

Overall distribution of organisms reported as causing SSIs (inpatient and readmission), all surgical categories, NHS hospitals, England, 2011 / 2012



Other bacteria: mostly comprising 'other Gram-positive organisms', 'unspecified diphtheroids' and other Gram-negative bacteria'

The aetiology of SSI varied by surgical category, with S. aureus continuing to account for the majority of SSIs in the mandatory orthopaedic categories (37 %) and in spinal surgery (37 %).[4]

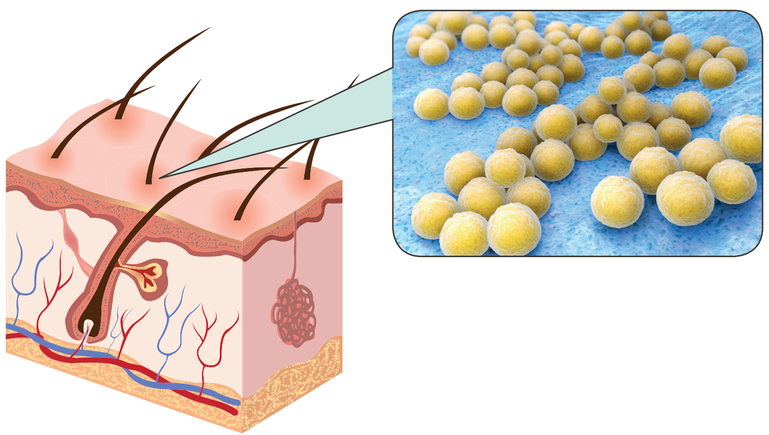
1) WHO. Report on the burden of endemic Health Care-Associated Infection Worldwide. WHO. 2011.
2) National Institute for Health and Clinical Excellence: Guidance. Surgical Site Infection: Prevention and Treatment of Surgical Site Infection. London: RCOG Press; 2008 Oct.
3) Robert Koch Institute. National prevalence study on nosocomial infections and antibiotic usage in Germany .2011.
4) Surveillance of Surgical Site infections in NHS hospitals in England, 2010/2011. Health Protection Agency HPA. 2011.

BACTERIAL SOURCE IS THE FLORA ON THE SKIN

According to the Surveillance of Surgical Site Infections in NHS hospitals in England, Staphylococcus aureus was the predominant isolate in the orthopaedic categories accounting for 33 % of hip prosthesis isolates (83 / 254), 26 % of knee prosthesis isolates (63 / 238) and 33 % of repair of neck femur isolates (87 / 263).[4]

Staphylococcus aureus is a common bacterium found on the skin and in the noses of up to 25 % of healthy people and animals.[5] Therefore the skin is a possible source of contamination.

Approximately 15 % of patients who acquired Methicillin-resistant Staphylococcus aureus (MRSA) developed a subsequent MRSA infection and the risk of infection in those colonised was highest in the peri-hospitalisation period.[6]



Most surgical site infections are caused by contamination of an incision with microorganism from the patient's own body during surgery. (NICE 2008)

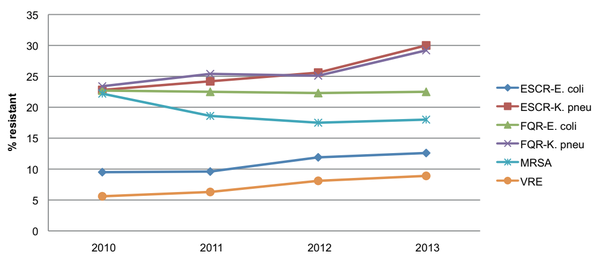
4) Surveillance of Surgical Site infections in NHS hospitals in England, 2010/2011. Health Protection Agency HPA. 2011.
5) www.cdc.gov/ncidod/dbmd/diseaseinfo/staphylococcus_food_g.htm
6) Balm ND et al, Progression from new methicillin-ressistant Staphylococcus aureus colonisation to infection: an obersvational study in hospital cohort. MBC Infectious Diseases 2013;13:491.

ANTIBIOTIC RESISTANCE

The percentage of resistant organisms has increased in hospital settings over the past years. Overall, the most concerning trends in Europe in 2013 were related to the occurrence of resistance in gram-negative bacteria (e.g. Escherichia coli, Klebsiella pneumoniae).

For E. coli and K. pneumoniae, a continuous increase in resistance to key antimicrobial groups was noted. A majority of the isolates reported to EARS-Net in 2013 was resistant to at least one of the antimicrobial groups under surveillance, and many of these showed combined resistance to third-generation cephalosporins, fluoroquinolones and aminoglycosides.

Antimicrobial resistance in Europe[7]



Cost-saving potential

- Costs per SSI due to prolonged hospitalisation, additional diagnostic tests, therapeutic antibiotic treatment and (sometimes) additional surgery, range from $ 400 USD for superficial SSI to more than $ 30,000 USD for serious organ or space infections.[8]
- 50 % reduction in SSI could save the average hospital approximately $ 200,000 USD annually on length of stay alone.[9]

7) ECDC antimicrobial-resistance-surveillance-europe-2013.
8) Joshua A. Urban. Surgical Infections. January 2006, 7(s1): s19-s22. doi:10.1089/sur.2006.7.s1-19.
9) Frampton L. Calculating the cost of surgical site infection. The Biomedical Scientist. Dec. 2010