



EKA

European Knee Associates
A section of ESSKA

Prevention of infection in TKA

26 November 2015

Prof. Reha N.
Tandogan, M.D.

*Çankaya Orthopedics,
Ankara, Turkey*



www.esska.org
www.europeankneeassociates.org



Conflict of interest disclosure form



☐ I have no potential conflict of interest to report

Type of affiliation / financial interest

Name of commercial company

Receipt of grants/research supports:

Receipt of honoraria or consultation fees:

Participants in a company sponsored speaker's bureau

Stock shareholder:

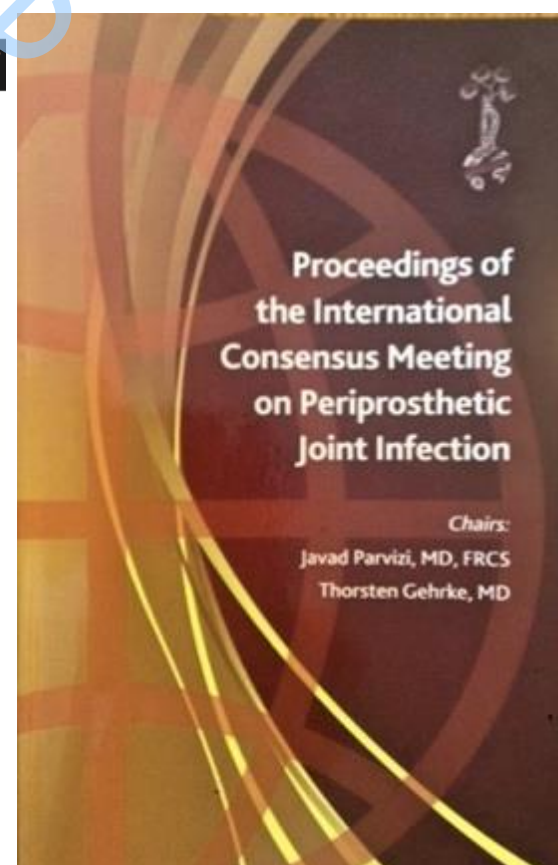
Spouse/partner:

Other support:

GUIDELINE FOR PREVENTION OF SURGICAL SITE INFECTION, 1999

Alicia J. Mangram, MD; Teresa C. Horan, MPH, CIC; Michele L. Pearson, MD; Leah Christine Silver, BS; William R. Jarvis, MD;
The Hospital Infection Control Practices Advisory Committee

Hospital Infections Program
National Center for Infectious Diseases
Centers for Disease Control and Prevention
Public Health Service
US Department of Health and Human Services



Proceedings of the International Consensus Meeting on Periprosthetic Joint Infection

Chairs:
Javad Parvizi, MD, FRCS
Thorsten Gehrke, MD

Pre-op preperation

- Whole body cleansing with CHG the night before and the morning of surgery
- Hair removal with a clipper as close to surgery as possible
- Delay surgery in active psoriasis and skin ulceration



Patient risk factors

- Uncontrolled diabetes
 - Glucose 200mg(+) HbA1c 7%(+)
- Morbid obesity
 - BMI: 40kg/m² (+)
 - Consider bariatric surgery ?



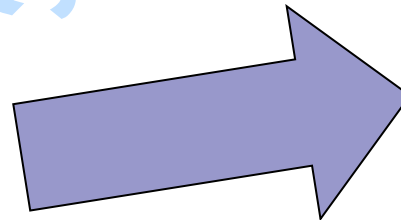
Patient risk factors

- **Malnutrition**
 - Albumin 3.5gr(-)
 - Transferrin 200 mg(-)
 - Total lymphocyte 800(-)
- **Immunosuppression**
 - HIV
 - Anti-neoplastics
- **Chronic hemodialysis**
 - Delay until transplant ?
- **Active renal / liver disease**



Patient risk factors

- Previous knee Surgery
- Inflammatory arthritis
- Post-traumatic arthritis
- IV drug abuse
- Excessive alcohol consumption
 - *40 units/week(+)*
- Excessive smoking
 - *1 pack (+)*



**Stop 4-6 weeks
Pre-op if possible**



Peri-operative antibiotics

- 30-60 minutes before incision
 - 2 hrs for Vancomycin & Fluoroquinolones
- At least 10 minutes before tourniquet inflation
- 1st or 2nd generation Cephalosporin
 - Vancomycin, Clindamycin or Teicoplanin in patients with Penicillin anaphylaxis



Peri-operative antibiotics

- Repeat AB dose if
 - Surgery longer than 2 half life of antibiotic
 - 2-4 hrs Cefazolin
 - 3-4 hrs Cefuroxime
 - 6-12 hrs for Vancomycin
 - 2000 cc(+) blood loss
 - 2000 cc (+) fluid infusion
- Discontinue after 24 hrs, even if drains or urinary catheters are in place

Operative environment

- Limit people & traffic
- No conclusive evidence for laminar air flow
 - Some studies show increased infection
- No benefit of space suits
- Double gloves beneficial
- Change gloves after 90 min. or touching cement



Operative tips

- Use CHG-alcohol for skin prep
- Iodine/clear adhesive drapes controversial
- Change blade after skin incision
- No need to change electrocautery
- Use low pressure pulsatile lavage
- Change suction tip after 60 minutes



Operative tips

- Short operative time
- Good surgical technique
- Avoid hematoma formation
- Use liquid impervious drapes
- Open sets just before surgery
- AB loaded sutures not effective



Antibiotics in cement

- Must be heat stable and have good elution properties
 - Vancomycin, Tobramycin, Teicoplanin, Cefuroxime
- Use AB loaded cement in all **revision** TKA's
- **AB in Primary TKA**
 - High risk patients: Diabetes, Immunosuppressed, Dialysis
 - Hospital flora S. Aureus
- **Disadvantages**
 - Resistant organisms
 - Mechanical properties of cement

Transfusion increases risk of infection

- Avoid allogenic blood transfusion
 - No transfusion above Hb 8 gr/dl
- **Tranexamic acid** effective in reducing blood loss & transfusion
- Before incision or tourniquet release
 - IV: Routine 1gr or 20 mg/kg
 - Intra-articular: 500 mg-2 gr/ in 20 ml saline
- 2nd dose at 4-5 hrs (optional)



Blood conservation

- Fibrin seal effective , PRP ineffective for blood loss
 - Cost ?
- Cell saver & autotransfusion not indicated for primary surgery



Take Home Messages

- Whatever you do infection rate is around 1-2%
- Discuss with the patient before surgery
- Prevention of infection is a team effort
- There is room for improvement ...

