

ANALYTICAL STUDY ON SURGICAL DURATION AS A FACTOR IN POSTOPERATIVE INFECTION RATES IN ORTHOPEDIC PROCEDURES



1. Rakshana Munusamy, 2. **J Naveen Bose**, 3. Anthony Peter Joseph, 4. Kamalkant Arvindkumar, 5. Ajeet Saoji, 6. Manju Priya Sivasamy, 7. Goutham Murugesan

BACKGROUND

- Postoperative infections in orthopedic procedures contribute to longer hospital stays and poorer patient outcomes.
- Surgical duration is a potentially modifiable risk factor influencing infection rates.
- Literature suggests a correlation but lacks consensus on threshold times.

AIM

To assess the association between **surgical duration** and **postoperative infection rates** in orthopedic patients.

METHODS

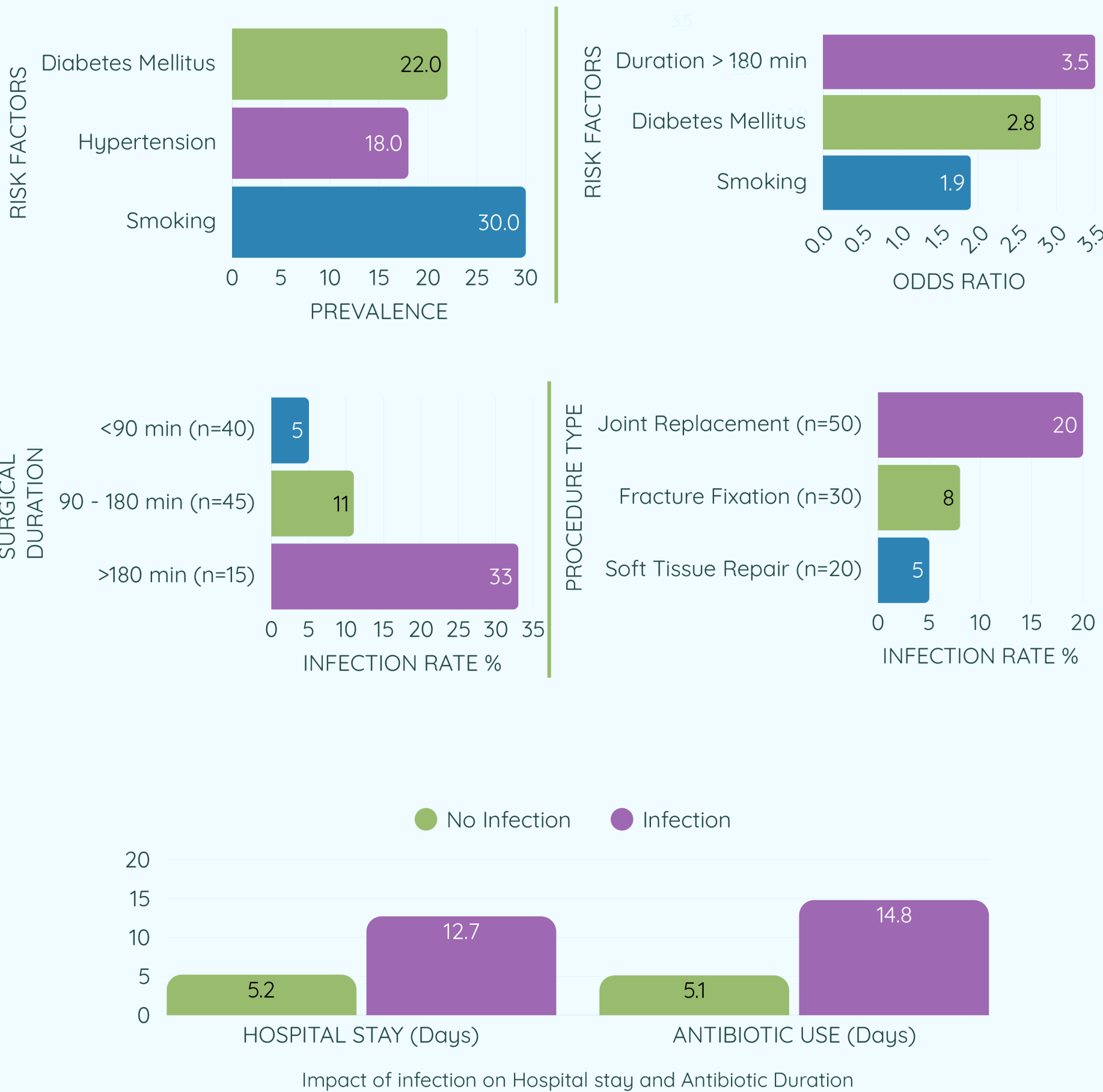
- **SETTING & DURATION:** Tertiary care hospital over 12 months
- **PARTICIPANTS:** 100 Patients
 - **Inclusion:** Patients who underwent elective or emergency orthopedic surgery
 - **Exclusion:** Patients with pre-existing infections or undergoing revision surgeries
- **DATA COLLECTED:**
 - Surgical duration (categorized as)
 - <90 min
 - 90–180 min
 - 180 min
 - Procedure type
 - Use of implants
 - Postoperative infections (within 30 days), confirmed via clinical signs, lab tests, and cultures

STATISTICAL ANALYSIS:

- Descriptive statistics
- Chi-square test for association between surgical time and infection rates
- Logistic regression adjusting for confounders (comorbidities, age, complexity)

RESULTS

n=100
Mean age (Years): 46.5 ± 12.3
Male (58%) > Female (42%)



DISCUSSION

- Surgeries >180 min increase infection risk due to longer tissue exposure.
- Implants and diabetes raise infection susceptibility.
- Infected patients stay longer and need more antibiotics.
- Efficient surgery, strict asepsis, and close perioperative care are essential.
- Research should focus on safe ways to reduce operative time.

CONCLUSION

- Longer surgical time and diabetes significantly increase infection risk.
- Risk rises sharply beyond 180 minutes.
- **Optimizing surgical time and strengthening perioperative care** reduce infections, shorten hospital stays, and improve outcomes.

REFERENCES

