

Rifampin resistance and multidrug resistance or extensive drug resistance predict failure in monomicrobial *Staphylococcus epidermidis* periprosthetic joint infection

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Study Overview & Methodology

2010 ————— 2024

15-Year Retrospective Cohort Study

Analyzed consecutive monomicrobial *S. epidermidis* PJs treated at a tertiary hospital.



105 Evaluable Patients

Diagnosis based on 2018 ICM criteria; patients required a minimum 12-month follow-up to assess success or failure.

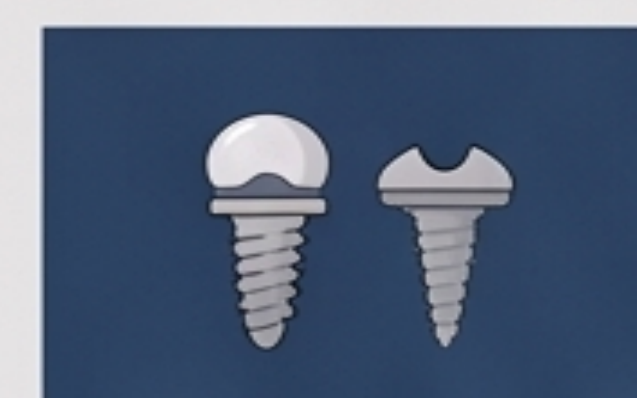


Mean age of **71 years**; **56%** female; **51%** knee infections vs. **49%** hip infections; **79%** of cases were chronic.

Global Outcomes & Surgical Strategy

78.1% Global Success Rate

Defined as infection eradication without the need for suppressive antibiotics or further surgery.



One-stage revision (93.3%) > DAIR (75.9%) > Two-stage revision (73.2%)

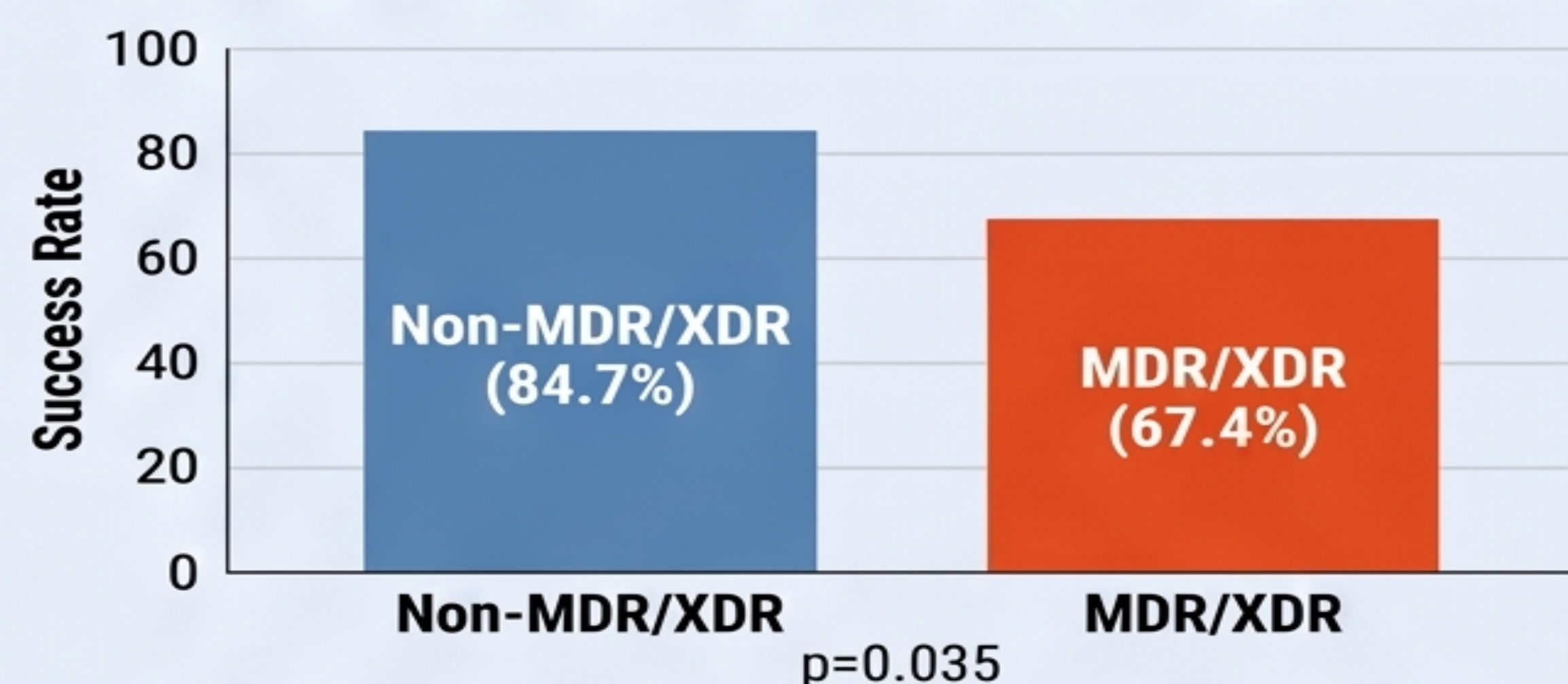
The Impact of Antibiotic Resistance

Rifampin Resistance vs. Susceptibility



Rifampin Resistance Significantly Lowers Success

MDR/XDR vs. Non-MDR/XDR Profiles



MDR/XDR Profiles Linked to Treatment Failure



Methicillin Resistance (MRSE) is Not a Predictor

With a p-value of 0.853, methicillin resistance did not show a statistically significant association with treatment failure.

Predicting Failure: Odds Ratios (OR)



Levofloxacin Resistance (OR 3.71)

Resistance to this fluoroquinolone increases the odds of treatment failure by nearly 4 times.



Rifampin Resistance (OR 5.83)

Eliminating this key anti-biofilm agent nearly sextuples the risk of failure.

High Risk ⚠️

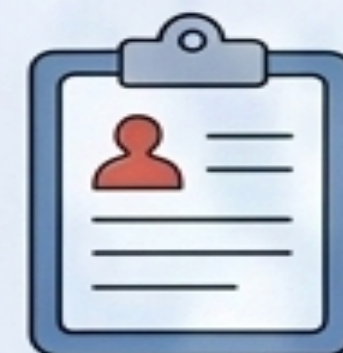
Double Resistance: The Greatest Risk (OR 8.01)

Consistent resistance to Levofloxacin predictor of failure.

Clinical Conclusions



Align Surgical Strategy with "Treatability"



In high-resistance cases (Rifampin-R or MDR/XDR), surgeons should have a lower threshold for implant exchange.



Implant Exchange | DAIR

When biofilm-active regimens are compromised by resistance, adequate source control through implant removal is critical for eradication.

These findings suggest a critical shift in clinical thinking, necessitating more aggressive surgical strategies when high-resistance profiles are present.