

RISK FACTORS AND CLINICAL IMPACT OF MULTIDRUG-RESISTANT PATHOGENS IN FRACTURE-RELATED INFECTION



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Malattie
Infettive
Traumatologia
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INTRODUCTION

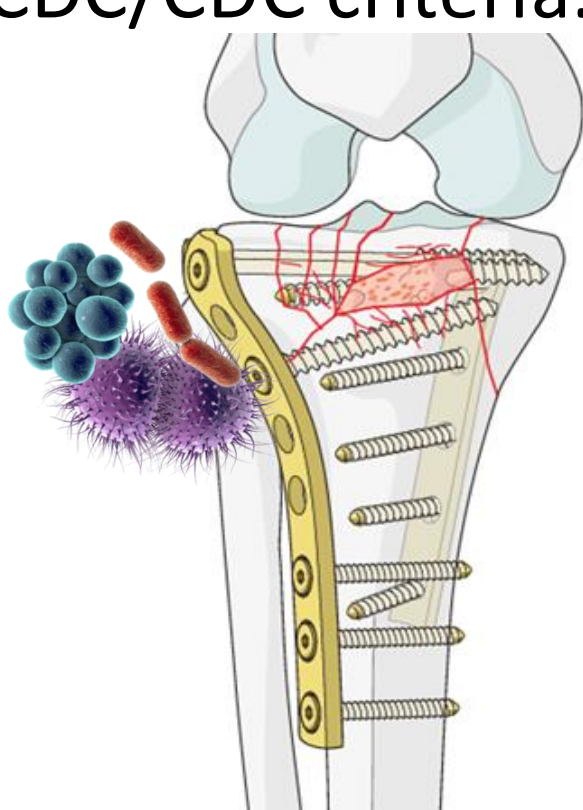
Fracture-related infections (FRI) often require complex surgical and antimicrobial management. The increasing prevalence of multidrug-resistant (MDR) pathogens may further increase treatment complexity by limiting antimicrobial options and prolonging therapy. However, their impact on long-term clinical outcomes remains unclear.

AIM

To identify risk factors associated with MDR FRI and assess their impact on treatment course and clinical outcomes

MATERIALS AND METHODS

Retrospective single-center study. MDR pathogens were defined according to standardized ECDC/CDC criteria.

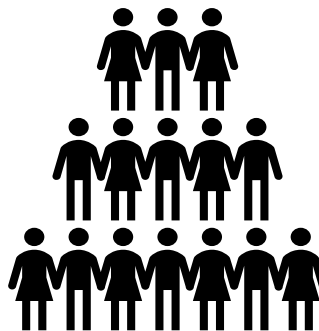


FRIs

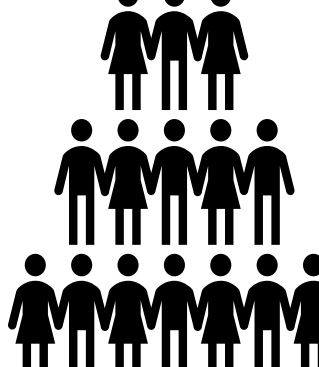
Jan 2021 – Dec 2023

With at least 1 year of follow-up

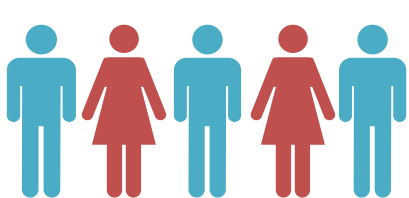
MDR group



No-MDR group



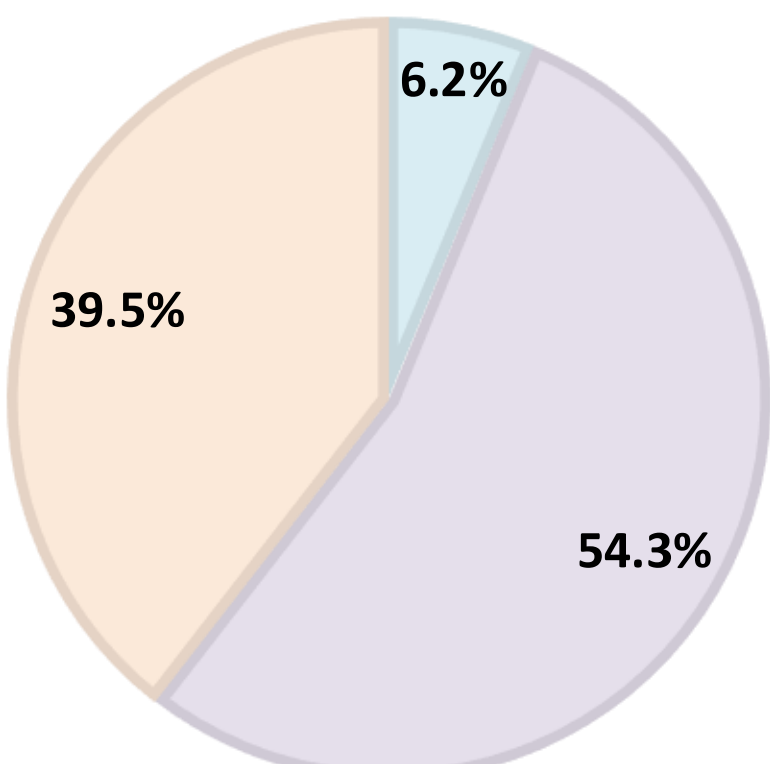
RESULTS



81 patients, 79% males
Median age 55 (IQR 42-69)

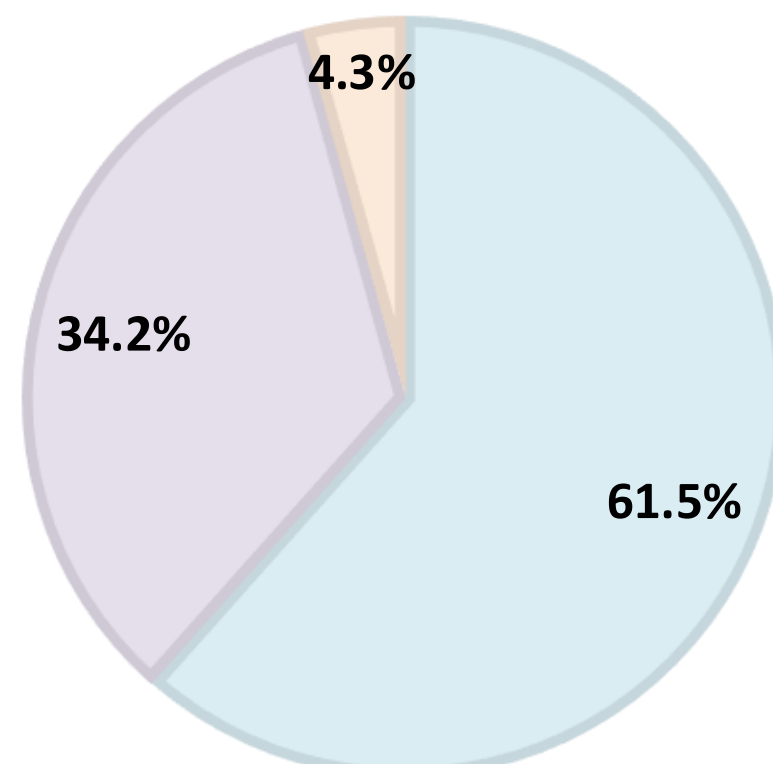
MDR 37 45.7%
no - MDR 44 54.3%

MICROBIOLOGICAL CULTURES



NEGATIVE MONOMICROBIAL POLYMICROBIAL

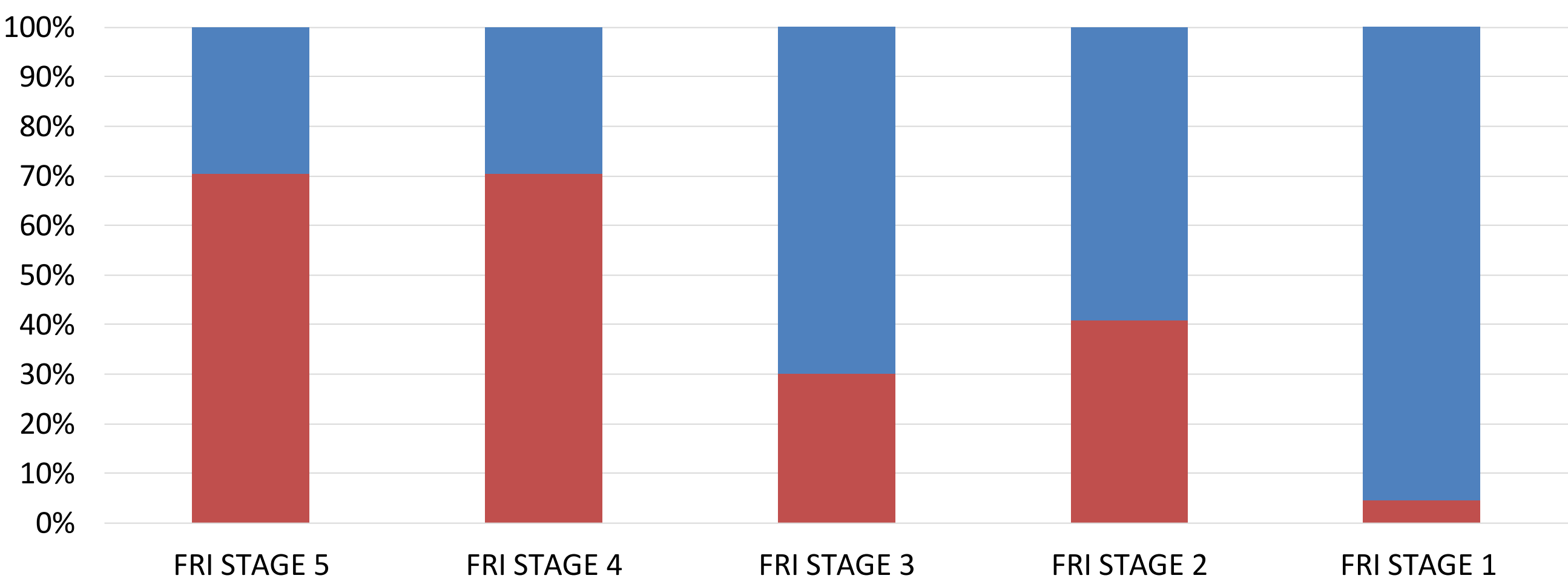
MICROBIOLOGICAL CULTURES



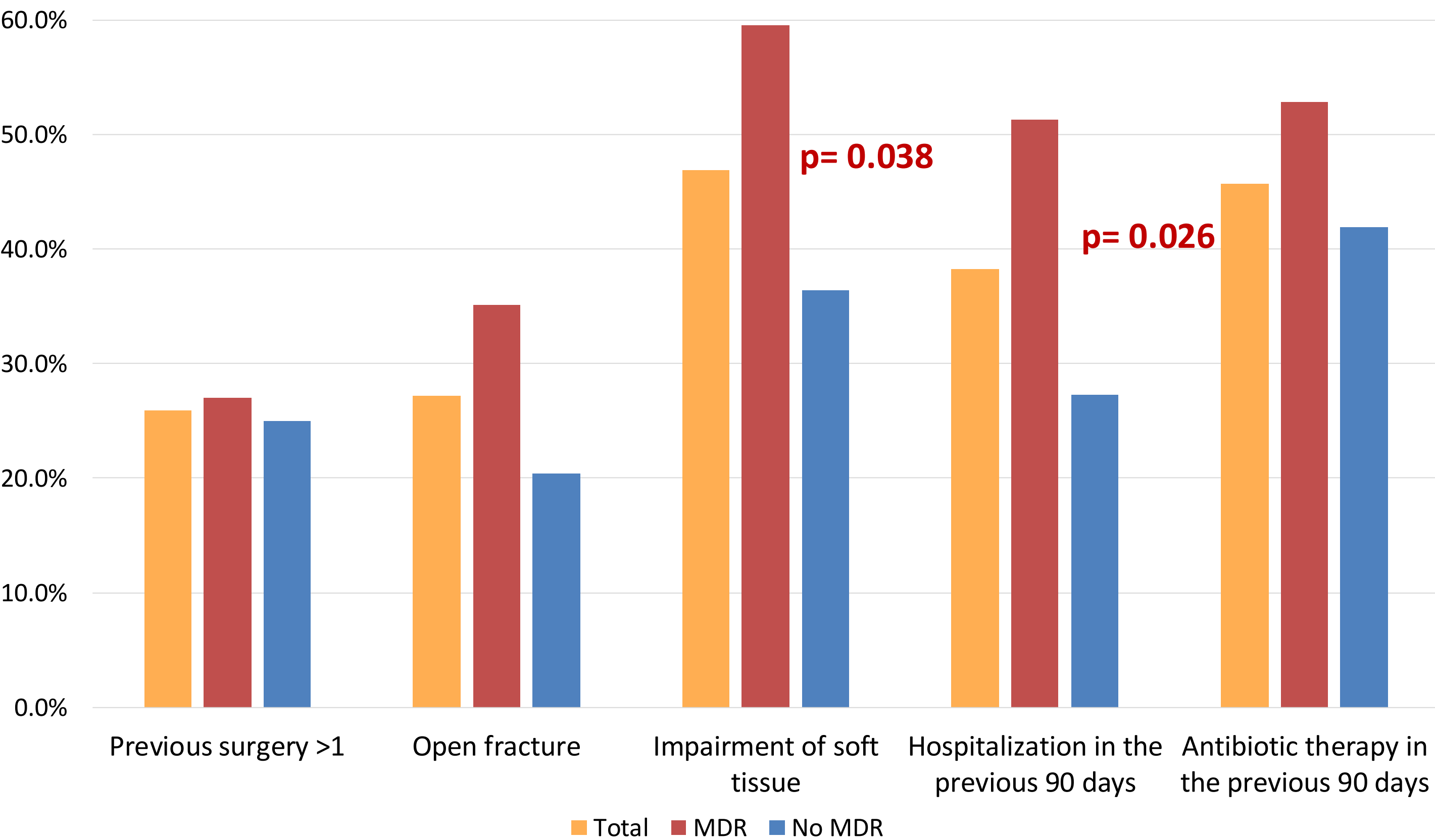
GRAM POSITIVE GRAM NEGATIVE FUNGI

FRI STAGE

p= 0.016



MDR No-MDR

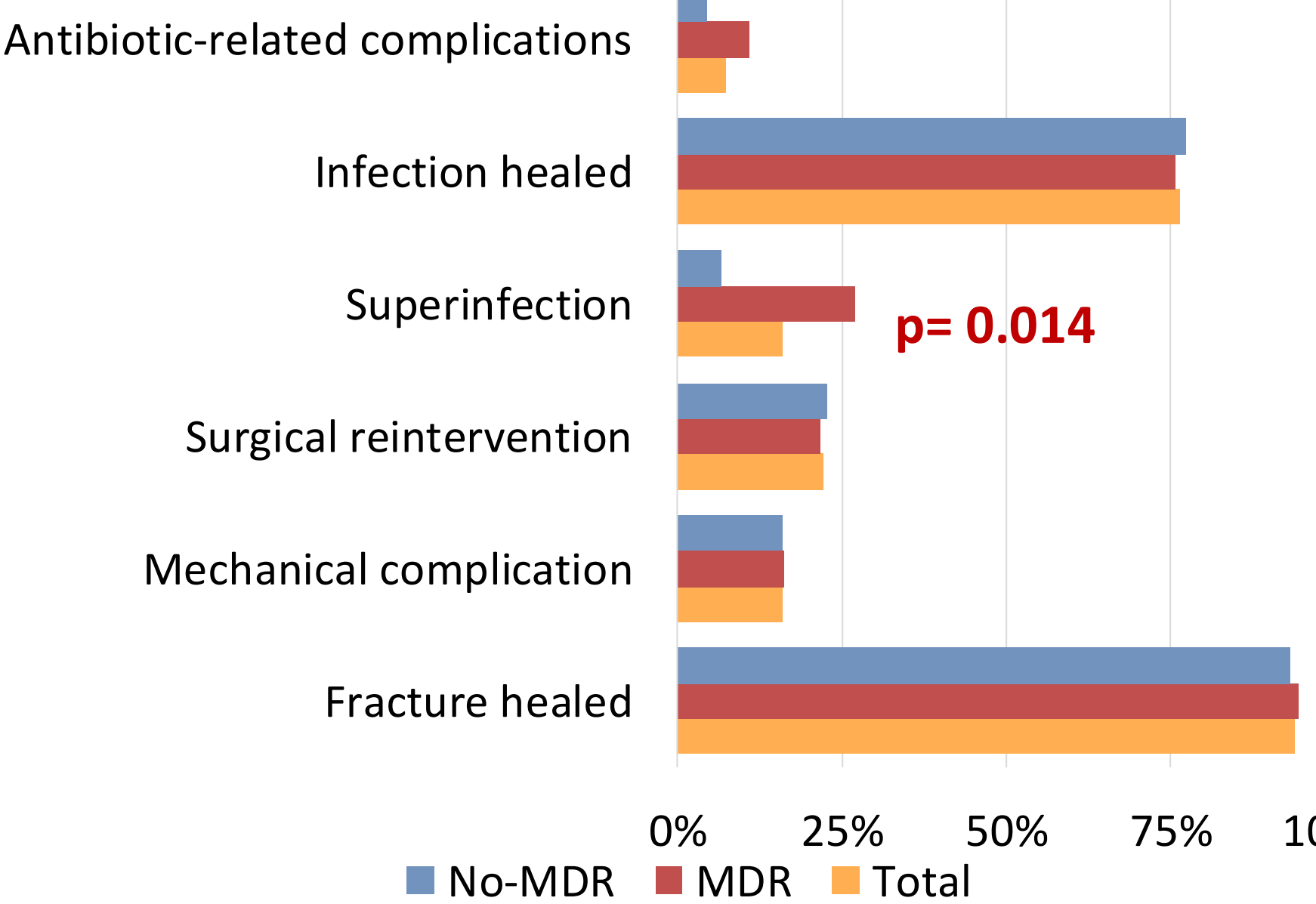


Total MDR No MDR

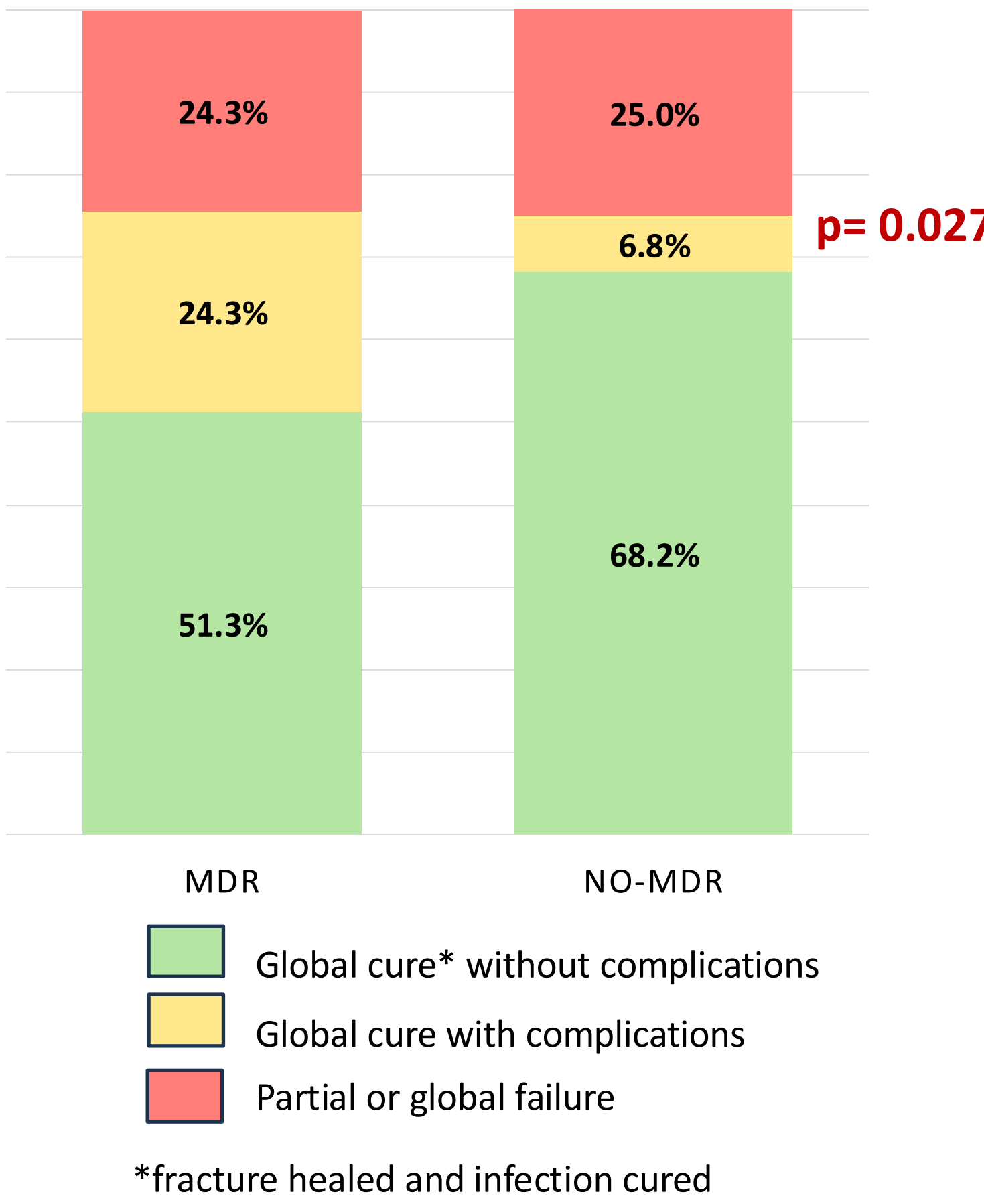
Multivariable analysis on risk factors associated with MDR FRI.
Model adjusted for age, sex and comorbidity burden.

Variable	OR (95% CI)	p-value
FRI stage	1.22 (0.65-2.32)	0.535
Soft tissue impairment	2.29 (0.68-7.66)	0.180
Lower limb below the knee (leg, ankle, foot)	0.11 (0.02-0.57)	0.009
Hospitalisation in the previous 90 days	3.74 (1.08-12.95)	0.038

Outcomes

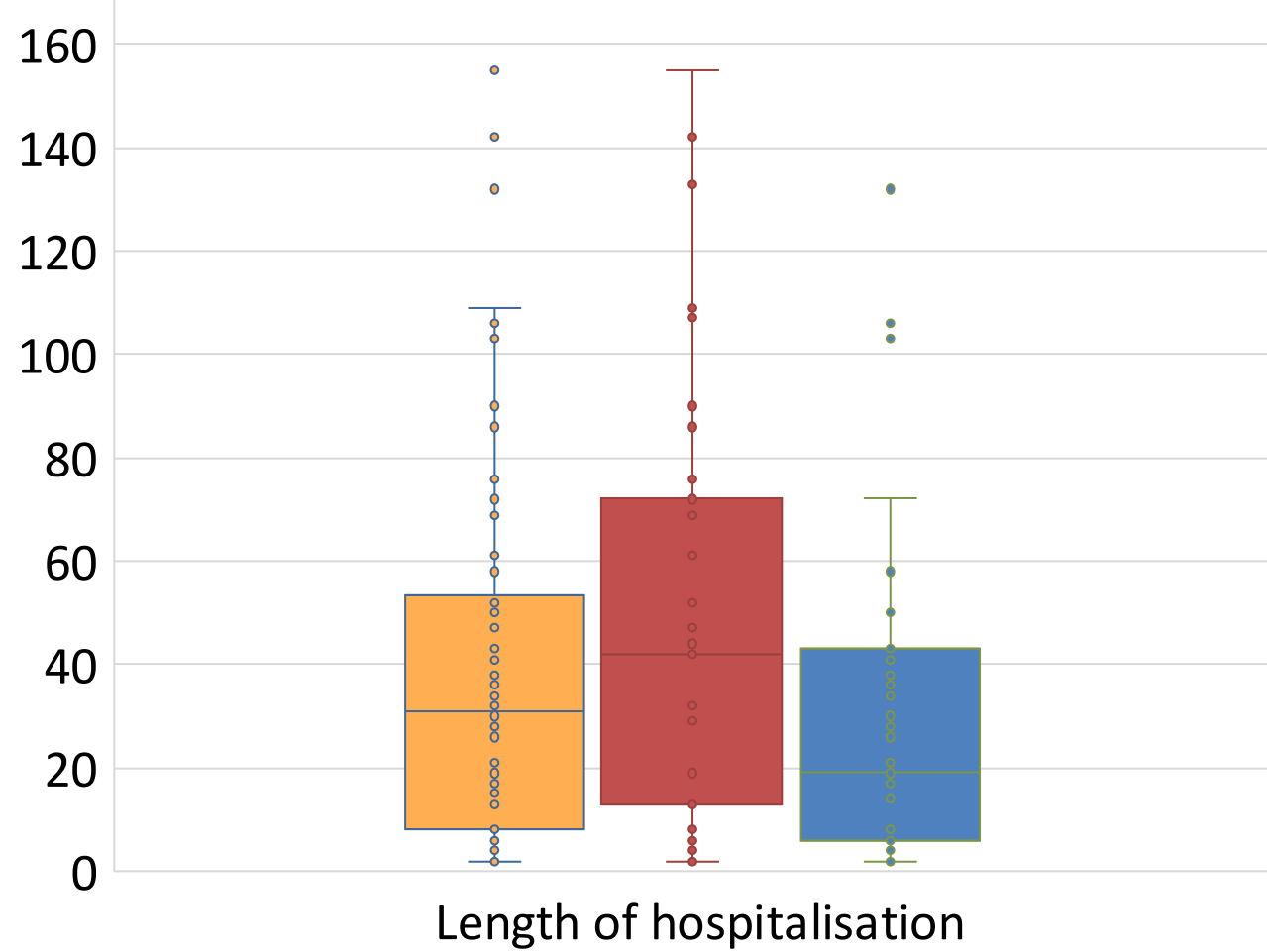


No-MDR MDR Total

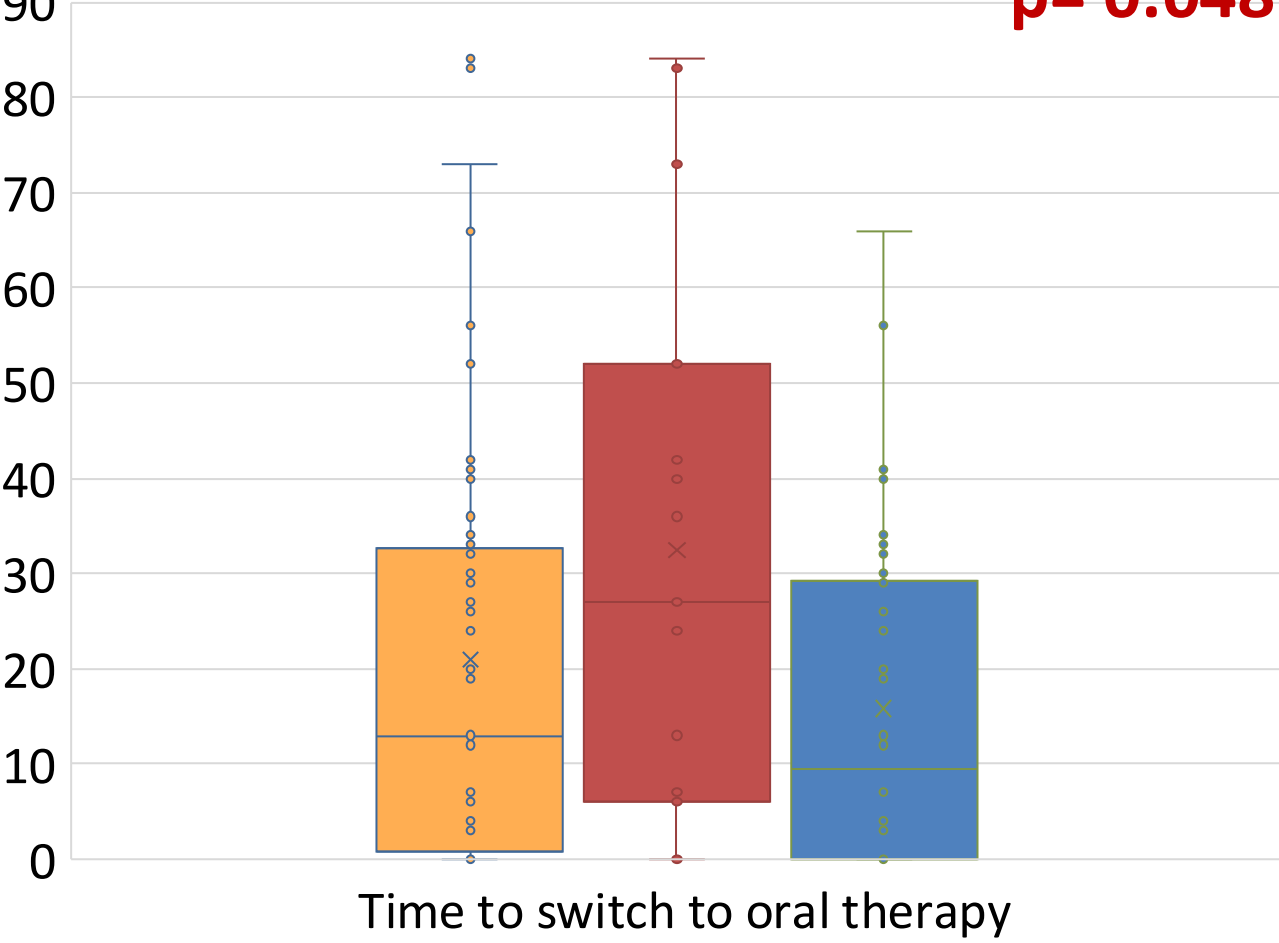


*fracture healed and infection cured

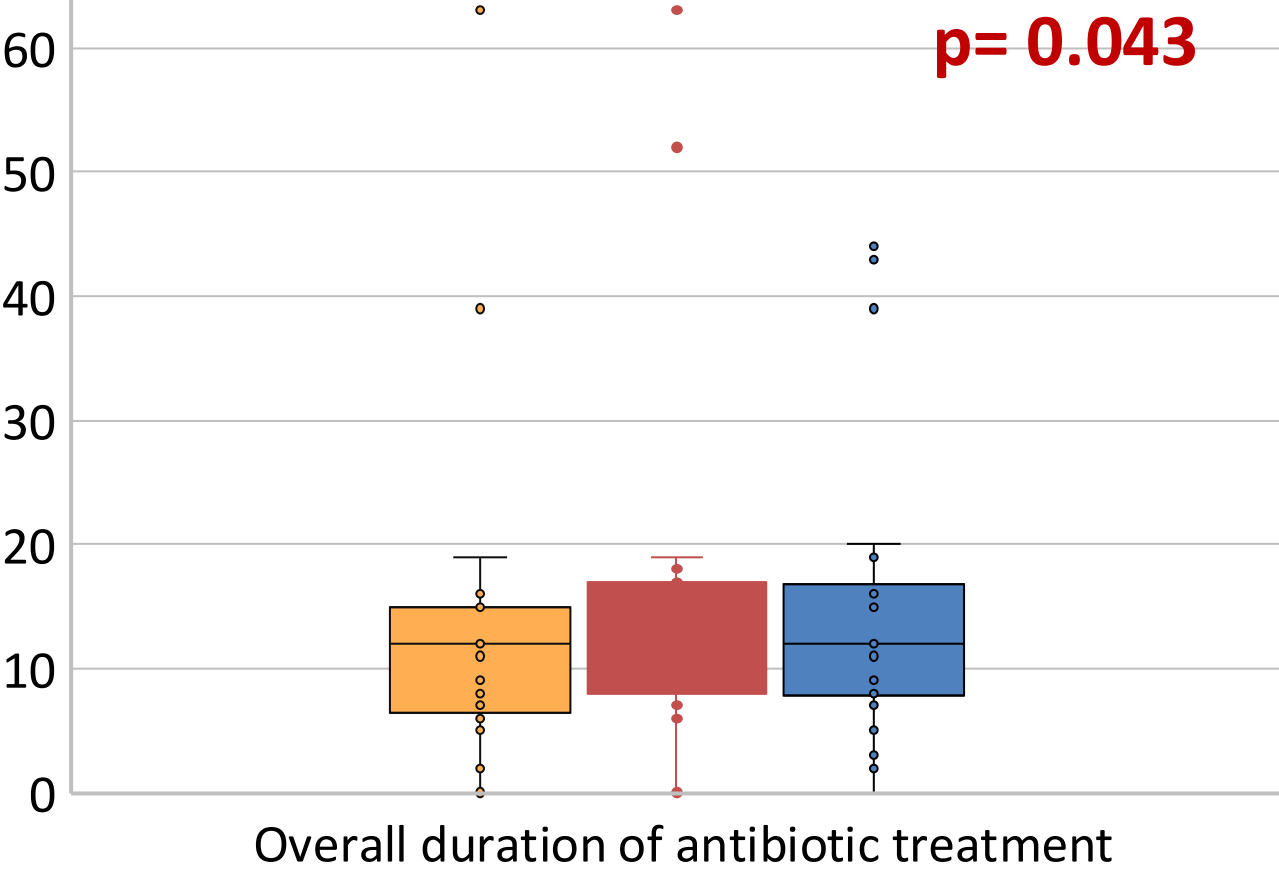
LENGTH OF HOSPITALISATION p= 0.030



TIME TO SWITCH TO ORAL THERAPY p= 0.048



OVERALL DURATION OF ANTIBIOTIC TREATMENT p= 0.043



CONCLUSIONS

MDR FRI were associated with identifiable risk factors and greater treatment complexity, requiring more demanding antimicrobial strategies and longer hospitalisation. Despite this increased burden, MDR pathogens were not associated with worse clinical outcomes.
Early risk recognition may guide empirical therapy, while multidisciplinary management may help achieve favourable outcomes even in MDR FRI.