

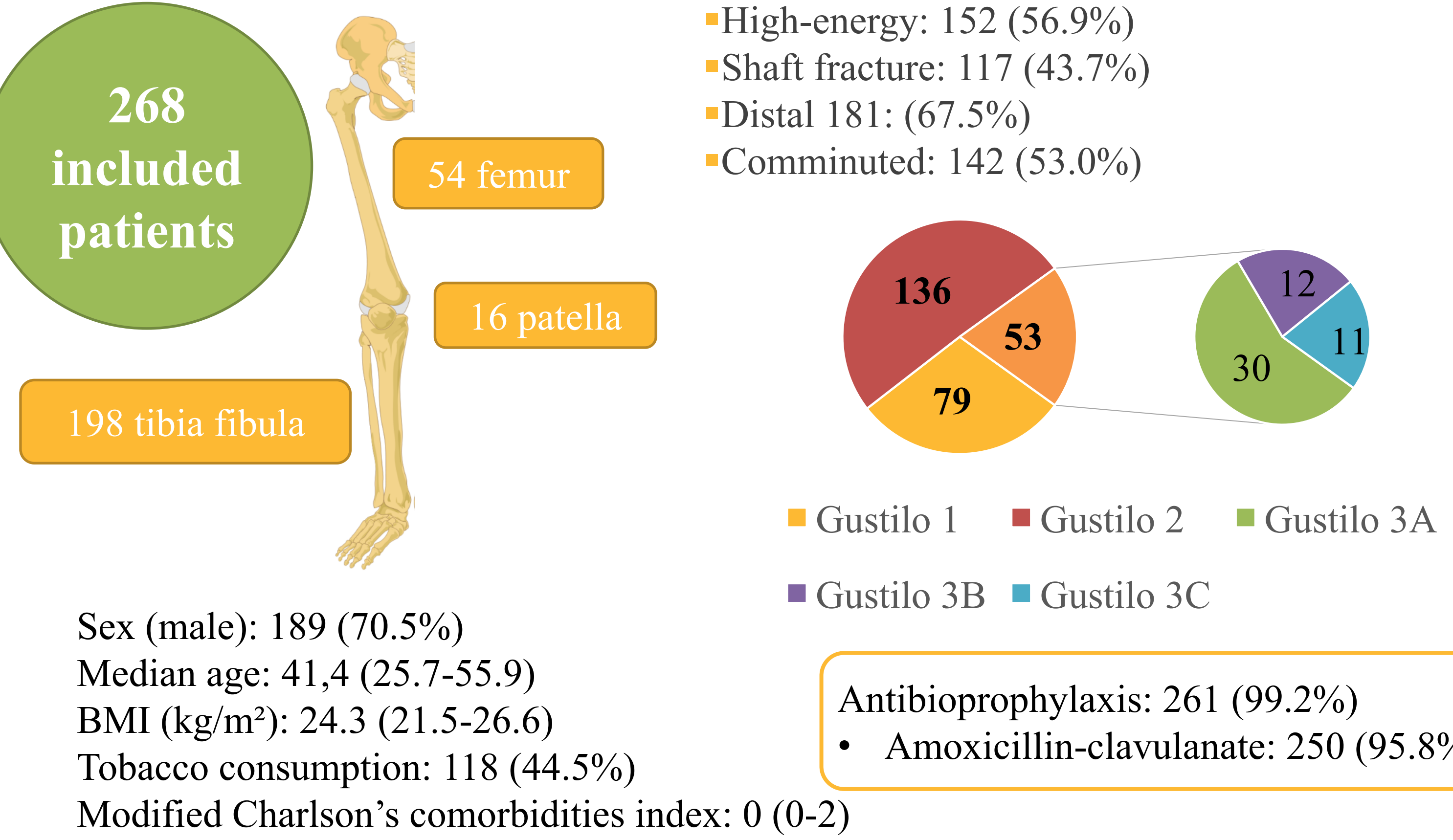
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Included population

**Retrospective cohort study** (2015-2019)

Inclusion of all patients with **an open fracture of the lower limb**, managed in our tertiary care center hosting one of the French reference center for the management of complex bone and joint infection



Infection rate: 13.8% (n=37)

Risk factors for open fracture-related infection

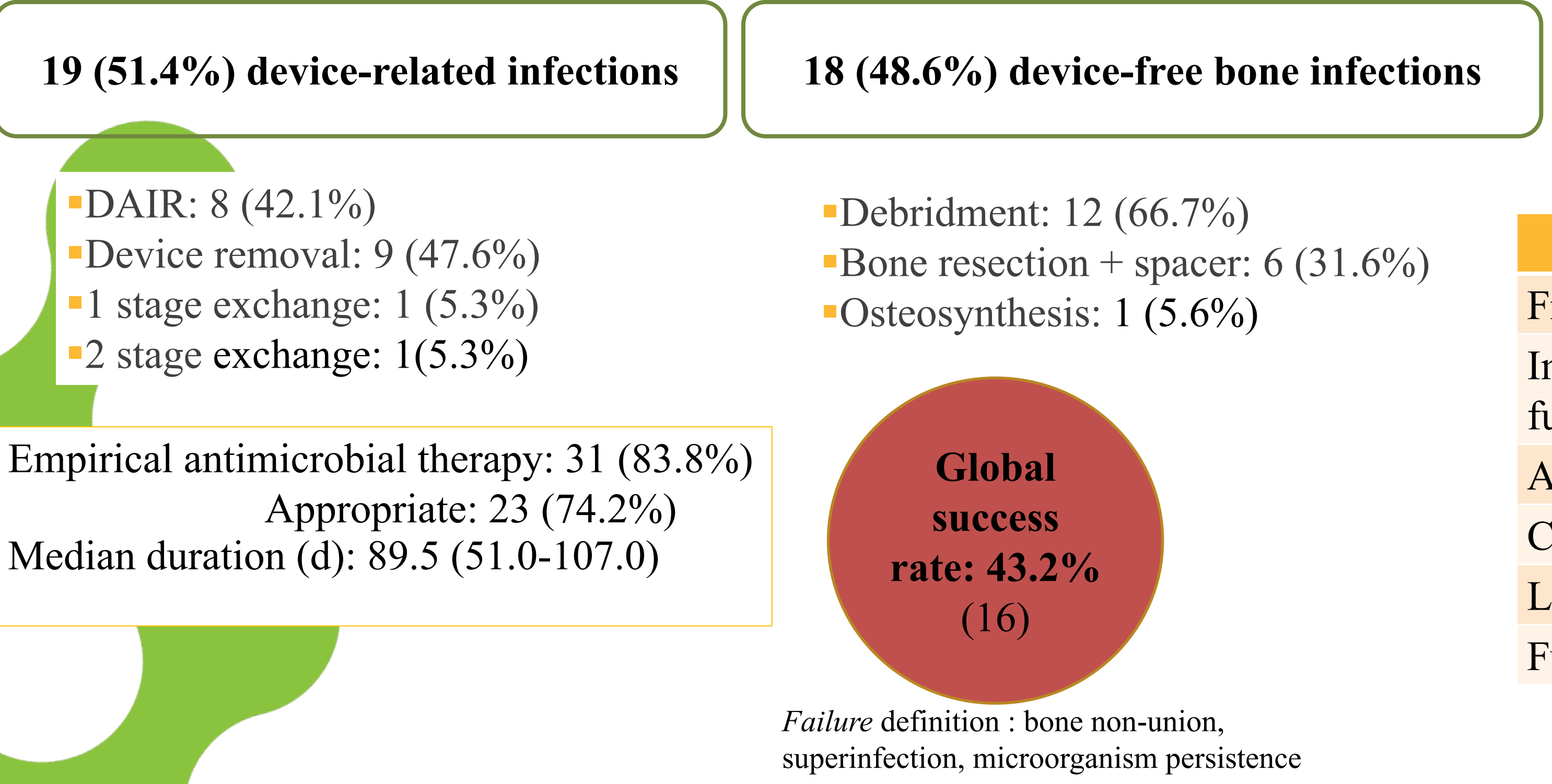
	OR 95%	p-value
Tobacco	2.632 (1.275-5.432)	p<10 <sup>-3</sup>
Gustilo 3	6.116 (2.917-12.823)	p<10 <sup>-3</sup>
External fixation	2.447 (1.115-5.185)	p=0.017
Initial bone loss	2.883 (1.164-7.142)	p=0.022
Surgery duration (each 1h)	1.675 (1.042-2.694)	p=0.033
Metaphysis	2.123 (1.041-4.433)	p=0.039
Antibioprophylaxis duration (d)	0.907 (0.809-1.016)	p=0.022

Univariate analysis

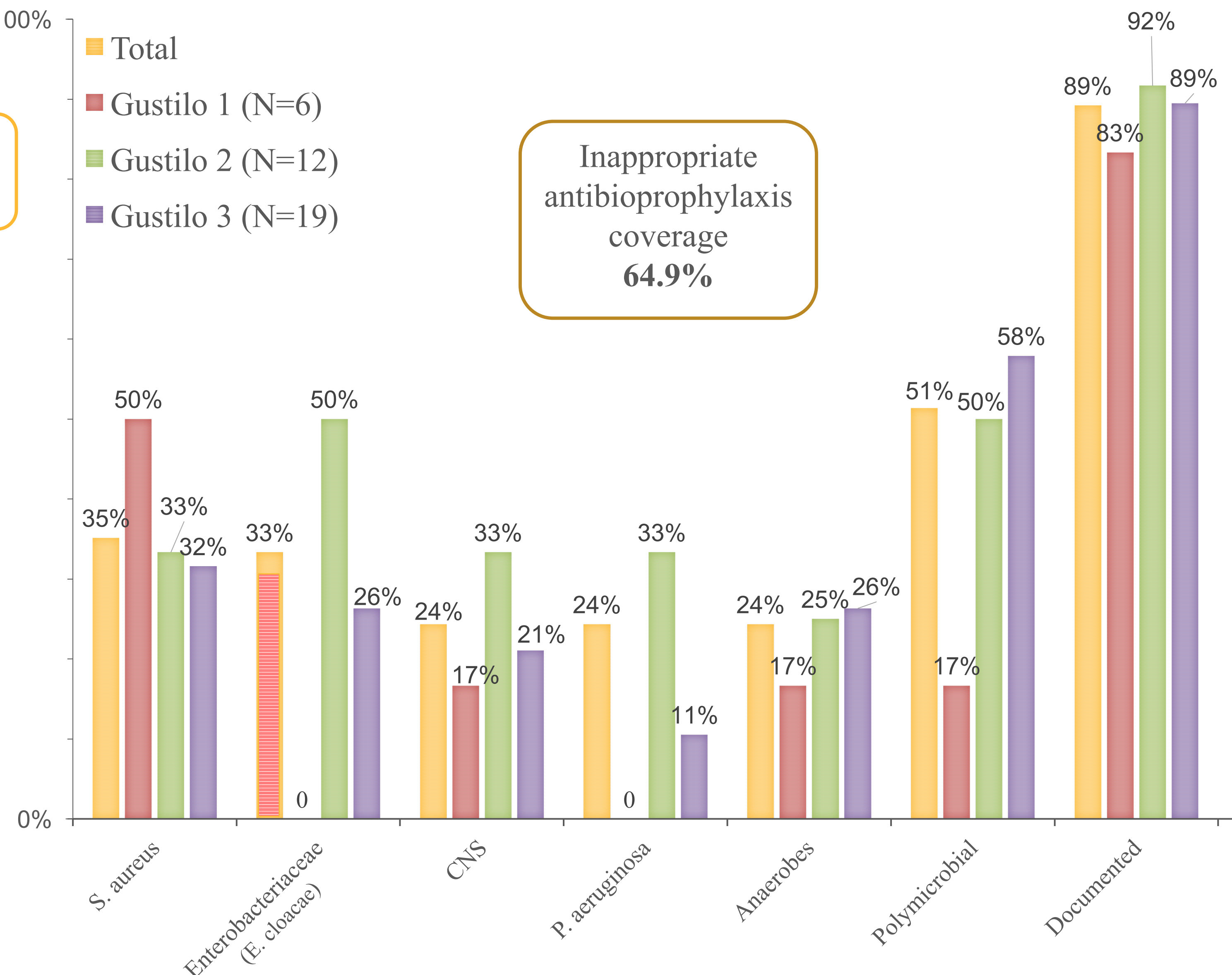
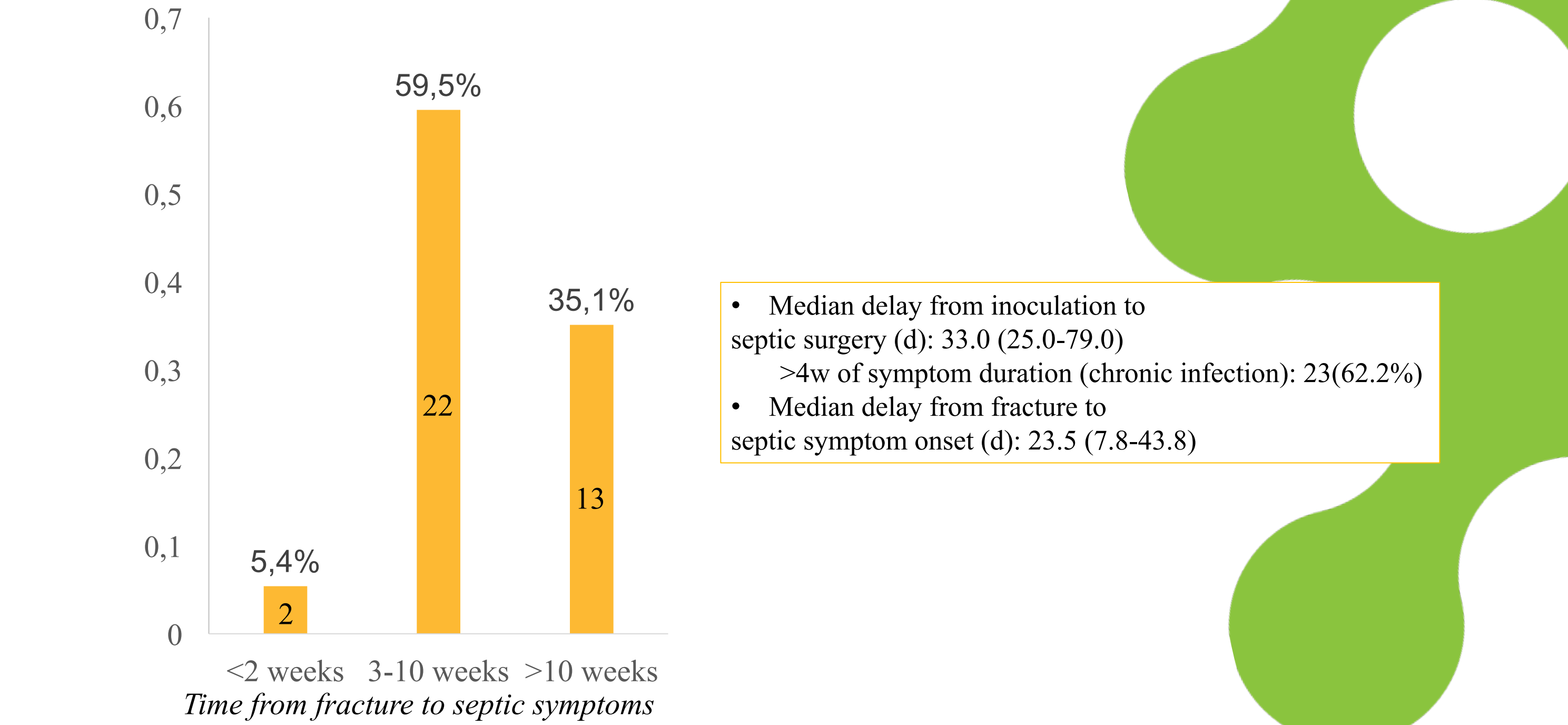
	OR 95%	p-value
Tobacco	5.640 (1.906-16.687)	p=0.002
Gustilo 3	12.607 (4.384-36.255)	p<10 <sup>-3</sup>

Multivariate analysis

Open fracture-related infection management and outcome



FRI characteristics



Risk factor for open fracture-related infection treatment failure

	OR (95%)	p-value
BMI	1.069 (0.915-1.249)	p=0.402
Shaft	3.939 (0.862-18.006)	p=0.077
Bone loss	0.175 (0.030-1.034)	p=0.054
DAIR	12.250 (1.080-138.988)	p=0.043
S. aureus	4.074 (0.854-19.432)	p=0.078

Outcome - Median follow-up 19.9 months (11.4 – 28.9)

	Global outcome (N= 268)	FRI outcome (N=37)	OF outcome (N=231)
Fracture healing	222 (90.2%)	26 (78.8%)	196 (92.0%)
Impaired long term functional outcome	130 (52.4%)	28 (87.5%)	102 (47.2%)
Amputation	12 (4.9%)	2 (6.3%)	10 (4.7%)
Chronic pain	97 (39.1%)	17 (53.1%)	80 (37.0%)
Limping	57 (23.0%)	5 (15.6%)	52 (24.1%)
Full professional activity	109 (60.2%)	19 (70.4%)	90 (58.4%)

FRI was associated with an increased risk of functional sequelae (OR 7.824; p<10<sup>-3</sup>)

Conclusion

Early FRI are frequent and difficult-to-treat complications. Their medical and surgical treatment is challenging due to their multimicrobial origin and functional orthopedic issues. A Gram-negative coverage in the intial antibioprophylaxis can be discussed for Gustilo 2 and 3 fractures.