

Post-traumatic *Pseudomonas aeruginosa* osteomyelitis patients admitted to MSF orthopaedic centers in Mosul, Iraq and Gaza, Palestine: a retrospective study



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INTRODUCTION

- Post-traumatic osteomyelitis (PTO) is challenging to cure, more so in contexts with weakened health systems & high prevalence of multi-drug resistance
- PTO caused by *Pseudomonas aeruginosa* (PAPTO) is a common among conflict-related injuries and is generally associated with long hospitalization and poor outcomes.



AIM

To describe the characteristics, clinical outcomes and appropriateness of antibiotherapy provided to patients with post-traumatic osteomyelitis caused by *Pseudomonas aeruginosa* (PAPTO)

- Admitted to 3 MSF supported facilities specialized in limb reconstructive surgery in Mosul, Iraq and Gaza, Palestine
- Between 1 April 2018 and 15 September 2021 and followed-up until 31 January 2022.

METHODS

DESIGN

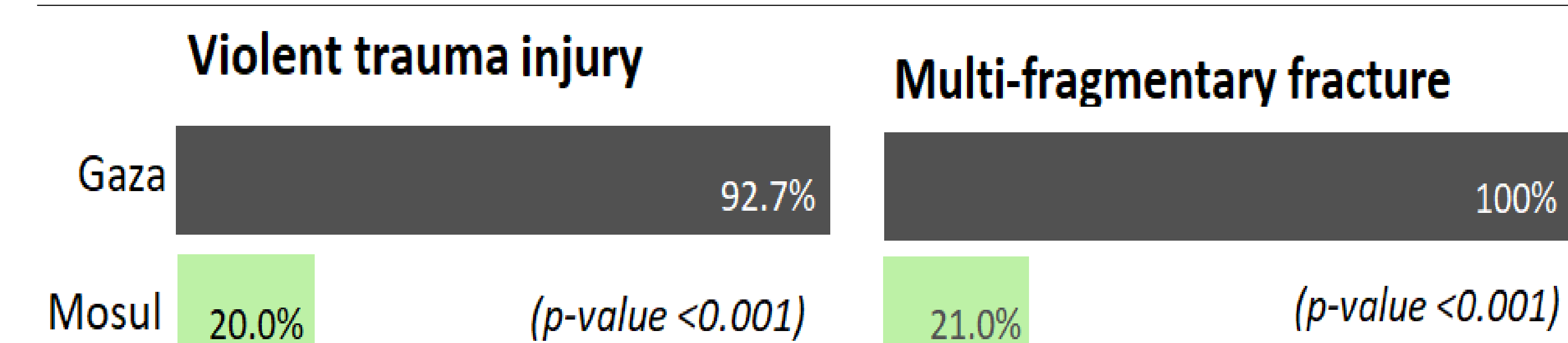
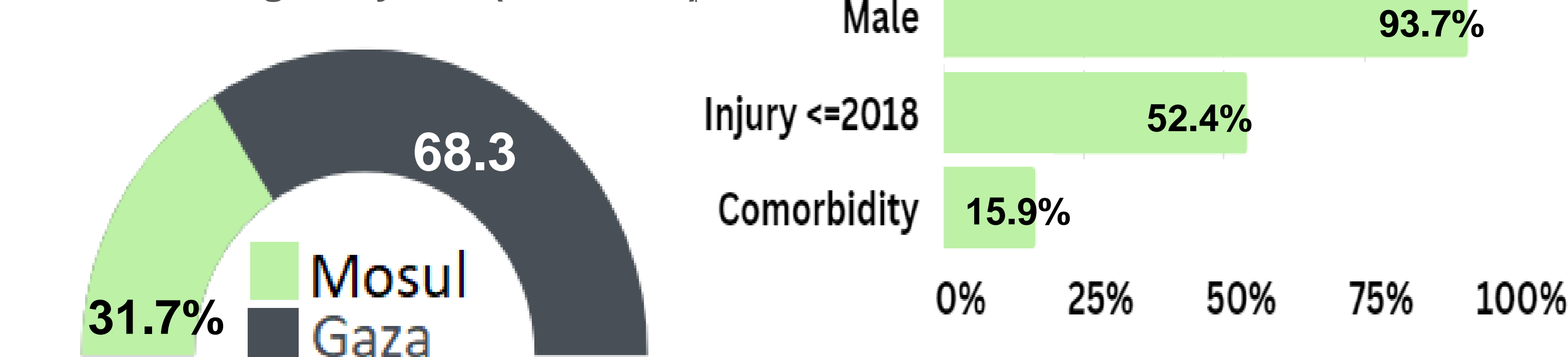
Retrospective descriptive cohort study.

POPULATION

Patients diagnosed with PAPTO by intraoperative bone biopsy culture performed at locally validated microbiology laboratories, admitted to the MSF facilities in Mosul and Gaza during the study period were included. Patients with only tissue biopsy results and showing possible contamination have been excluded.

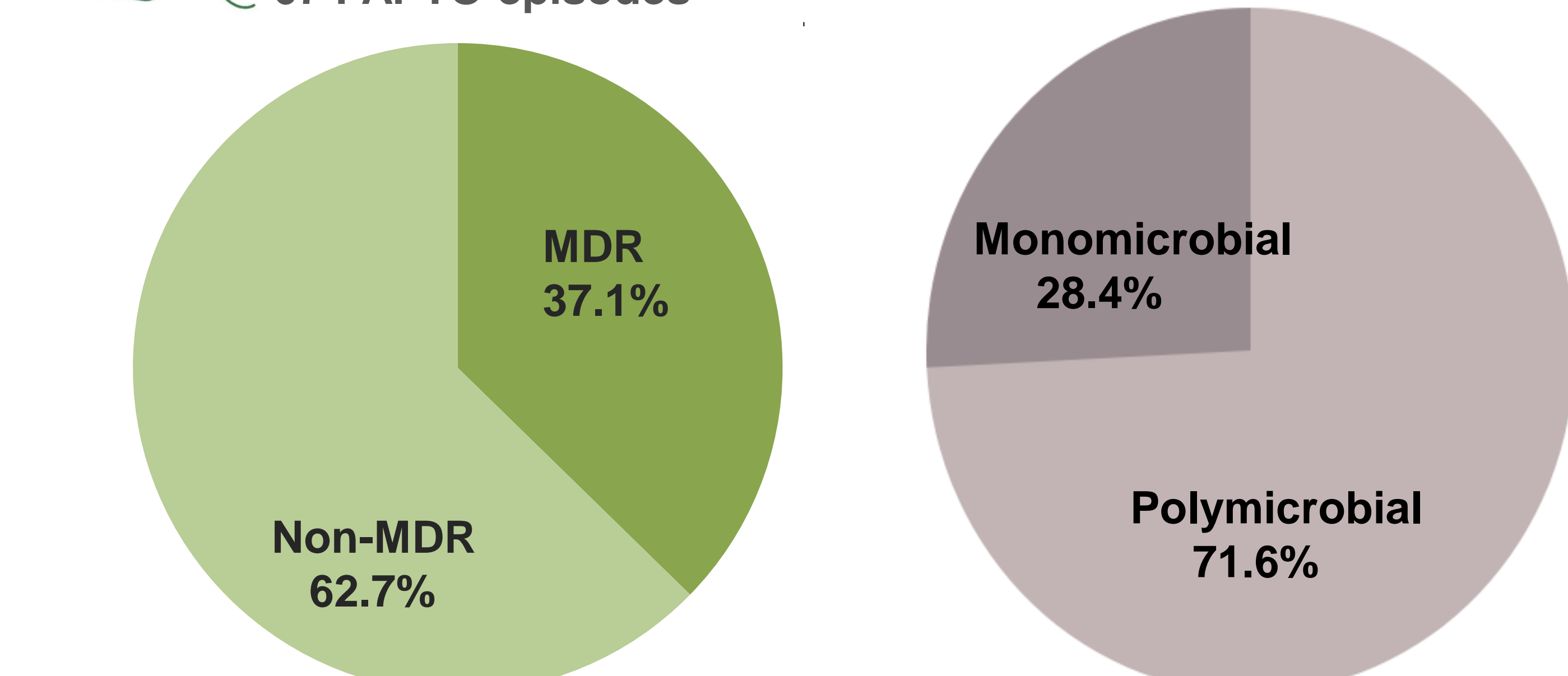
RESULTS - patients

63 patients
Median age 25 years (IQR 19-34)

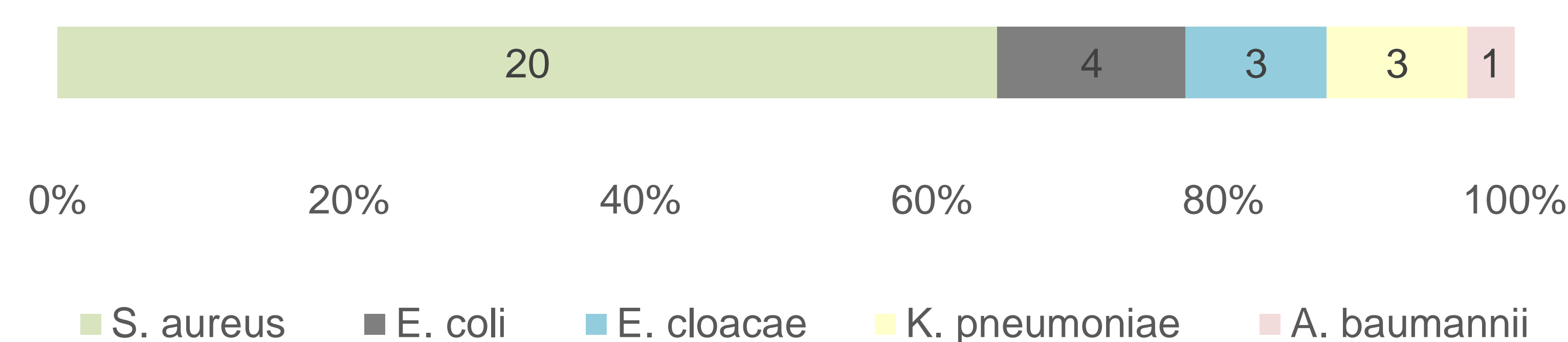


RESULTS - episodes

67 PAPTO episodes



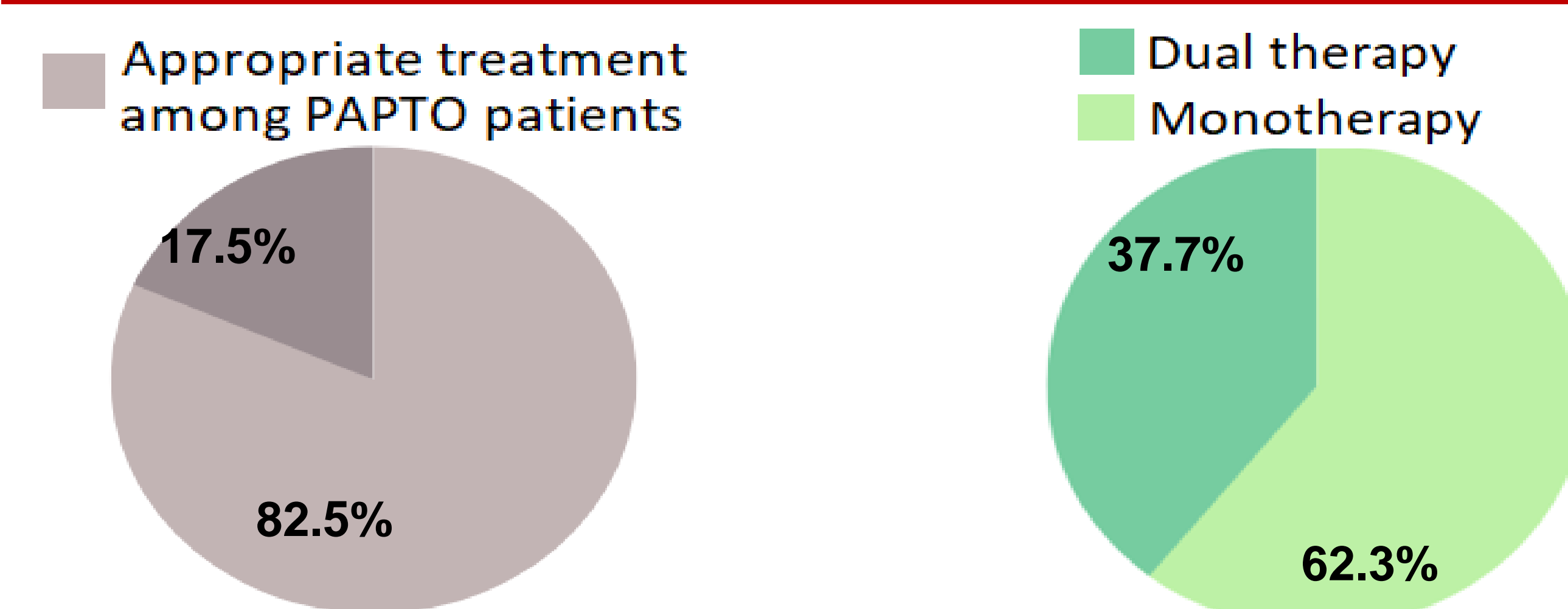
Non-*Pseudomonas aeruginosa* isolates among polymicrobial PAPTO N=27



Staphylococcus aureus was methicillin-resistant in 95% of cases

E. Coli showed 100% of Extended spectrum beta lactamase positive patterns

RESULTS - antibiotic treatment



- Mean days of treatment length (45 days): no difference monotherapy vs dual therapy (or by recurrence)
- Median follow-up days completed was significantly longer in Gaza (305 d [IQR 111-483]) versus Mosul (86 d [IQR 24-213])

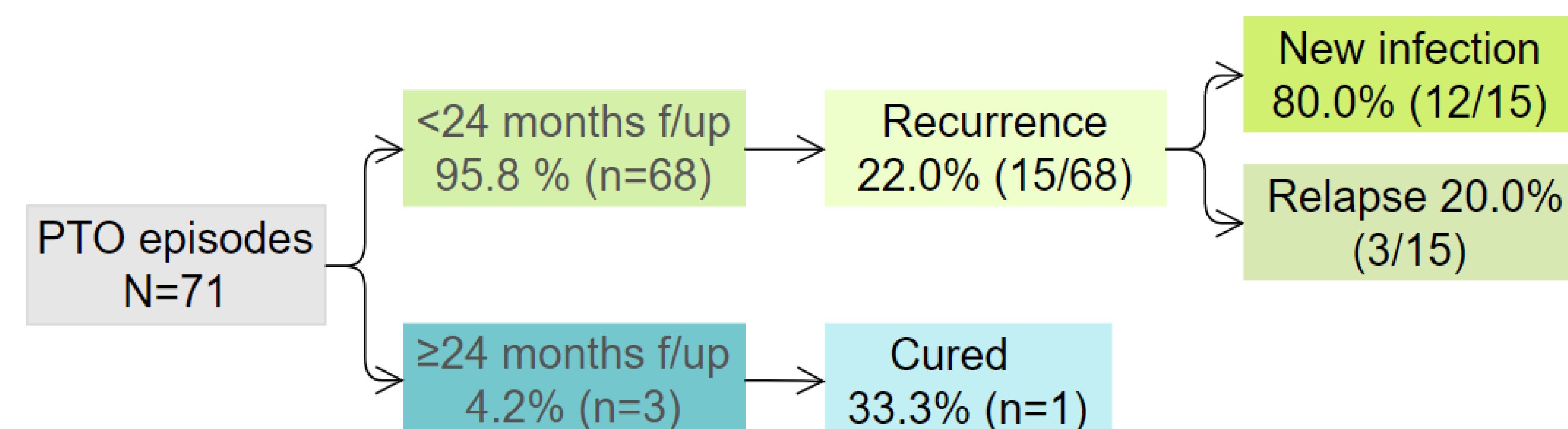
Antibiotic	Total (n=67)		Mosul (n=21)		Gaza (n=46)		P-value ^a
	n*	R (n, %)	n*	R (n, %)	n*	R (n, %)	
Cefepim	38 (56.7)	14 (36.8)	0	0	38	14 (36.8)	NA
Ceftazidim	63 (94.0)	23 (36.5)	21	5 (23.8)	42	18 (42.9)	0.139
Ciprofloxacin	58 (86.6)	21 (36.2)	18	3 (16.7)	40	18 (45.0)	0.044
Gentamycin	62 (92.5)	26 (41.9)	21	5 (23.8)	41	21 (51.2)	0.038
Carbapenem ^b	63 (94.0)	14 (22.2)	21	3 (14.3)	42	11 (26.2)	0.350
Piperacillin	62 (92.5)	11 (17.7)	21	3 (14.3)	41	8 (19.5)	0.735
Tazobactam							

NA not applicable, R resistant

^a p<0.05 is statistically significant

^b include those tested/resistant to Imipenem or Meropenem

RESULTS - outcomes



CONCLUSION

- To our knowledge, this is the first study describing PAPTO in conflict contexts in facilities with a standardized multidisciplinary care package
- Infection outcomes (recurrence) are comparable to studies in non-conflict and high-income countries
- We have a large PAPTO cohort, but still insufficient to make significant management recommendations.

Ethics

This research was approved by the MSF ERB and the Ministry of Health and Environment of the Nineveh Health Directorate, Iraq, as well as the Helsinki committee in Gaza.

Acknowledgements

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