

Evolving Trend Of Microorganisms In Necrotising Fasciitis Of Extremities, Responsible For Amputation And Death. A Retrospective Study

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INTRODUCTION:

Necrotising fasciitis (NF) of extremities is a known emergency in orthopaedic surgery, described since decades ago. Despite bloom of advanced techniques in diagnostic and treatment, rates of unsalvageable limbs and death are still high. Though prompt surgical intervention is crucial, by knowing the microorganisms responsible for each patient is utmost important in tackling NF, hence reducing the mortality and amputation rates.

METHODS:

We include 87 patients with post-operative diagnosis of NF with cultures taken, either upper limbs or lower limbs, at our centre in year 2016. Patients' demographics, comorbid and tissue culture results, as well as the outcomes are traced. Types of NF representing the microorganisms is correlated with the 2 major outcomes i.e. limb amputation and death.

RESULTS:

Table 1 and 2 showing the mortality rate and amputation rate respectively in patients with different types of NF. Besides, the mortality rate of all subjects with NF is 25.3% while the amputation rate is 38%. Type III indicating the monomicrobial gram-negative presented in 42.5% of total cases, slightly higher than Type I (39.1%), and only 1 patient has NF with fungal infection. 8 cases of isolated *Pseudomonas aeruginosa* (21.6% of Type III) as causative agent reported. 4 cases of antibiotic resistant microorganisms, 2 (1 ESBL *E.coli* and 1 MRO *Pseudomonas aeruginosa*) succumbed to death.

Type	Death		Total
	Yes	No	
I	10 (45.5%)	24 (36.9%)	34 (39.1%)
II	4 (18.2%)	11 (16.9%)	15 (17.2%)
III	7 (31.8%)	30 (46.2%)	37 (42.5%)
IV	1 (4.5%)	0	1 (1.1%)
Total	22 (100%)	65 (100%)	87

Table 1 - p=0.254

Type	Amputation		Total
	Yes	No	
I	16 (48.5%)	18 (33.3%)	34 (39.1%)
II	3 (9.1%)	12 (22.2%)	15 (17.2%)
III	14 (42.4%)	23 (42.6%)	37 (42.5%)
IV	0	1 (1.9%)	1 (1.1%)
Total	33 (100%)	54 (100%)	87

Table 2 - p=0.277

DISCUSSIONS:

We find that Type III has emerged to become more common causative bacteria in NF¹ compared to previous studies which showed that Type I is the most common in NF with Type II more common in NF of extremities, and rare occurrence of Type III caused by mainly *Vibrio* species for monomicrobial gram negative.² Type III has amputation and death rate comparably same with other types of microorganism, however, emergence of superbugs in Type III causing death has drawn attention on usage of appropriate antibiotics.

CONCLUSION:

Understanding the types of microorganism in NF is as crucial as prompt surgical intervention because rapid evolving trend of bugs might end up with poor outcomes despite strong antimicrobial agents are used.

REFERENCES:

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