REEMPHASIZING THE ROLE OF ANAEROBIC BACTERIA IN SURGICAL INFECTION

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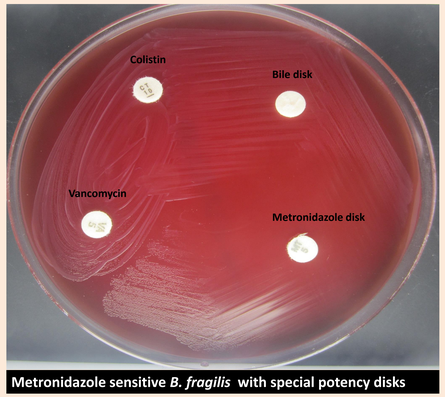
BACKGROUND AND OBJECTIVES

- Anaerobes are being recognized increasingly in surgical infections.
- Any event compromising oxidation reduction potential within tissues lead to growth of anaerobes. They are often neglected due to their polymicrobial nature and tedious culture techniques involved.
- The objective was to analyse the recovery of anaerobes from surgical infections.

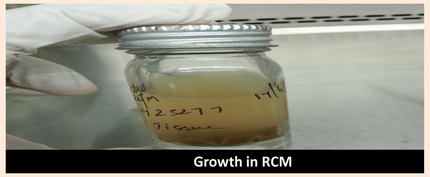
MATERIALS AND METHODS

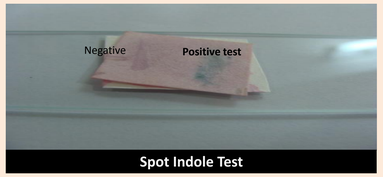
- A prospective study was conducted from January 2014 to June 2015 on specimens received from surgical ward.
- Tissue, Pus aspirate, Body fluids, Wound Swab in Robertson's Cooked Meat(RCM) broth were included.
- Specimens were processed for Gram stain, inoculated on Anaerobic Blood Agar, Neomycin Blood Agar, Phenyl Ethyl Alcohol Agar and incubated at 37°C in Don Whitley A 35 Anaerobic Chamber.
- Isolates were identified by Gram Stain, Aerotolorence test and sensitivities to special potency disks (Metronidazole 5U, Kanamycin 1mg, Colistin 10µg, Vancomycin 5µg).

Don Whitley – A35 Anaerobic Workstation

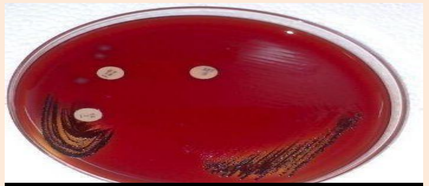


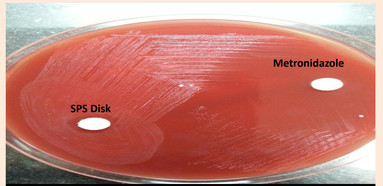
Metronidazole sensitive *B. fragilis* with special potency disks


Growth in RCM



Spot Indole Test


Pigmented *Prevotella* Species.



Peptostreptococcus anaerobius

RESULTS

- Total of 203 specimens were included in study
- In our study, total of 53 anaerobic bacteria were isolated,
- *Clostridium sp.* were the commonly isolated bacteria followed by *Bacteroides spp* . & *Peptostreptococcus anaerobius*
- Majority of anaerobes were isolated from patients with age group of 41-60 years. Males were predominant.
- Common clinical presentation was Necrotizing fasciitis
- Most common predisposing factors was Diabetes mellitus

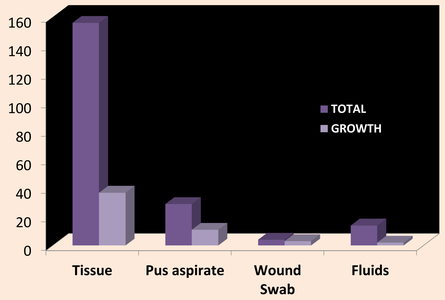


Fig 1: Recovery of anaerobic bacteria from various clinical specimens

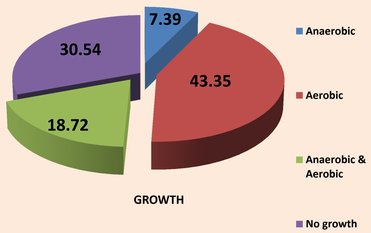


Fig 2: Distribution of anaerobes in clinical specimens

Table 1: Distribution of anaerobic bacteria from clinical specimens

TOTAL ANAEROBIC ISOLATES	NUMBER	PERCENTAGE
Anaerobic Gram positive cocci		
1. Peptostreptococcus anaerobius	11	5.4
2. Finegoldia magna	8	3.9
3.Peptoniphilus species	6	2.9
4. Anaerococcus species	1	0.5
Anaerobic Gram negative cocci		
1. Veillonella species	3	1.5
Anaerobic Gam negative bacilli		
1. Bacteroides species	14	6.9
2. Fusobacterium species	3	1.5
3. Prevotella species	10	4.9
4. Porphyromonas species	1	0.5
Anaerobic Gram positive bacilli		
1. Clostridium species	18	8.8

DISCUSSION AND CONCLUSION

- The importance of isolation and characterization of anaerobes in many of the clinical specimens has long been overlooked.
- Its is Important to create the awareness among the clinicians regarding, isolation and antibiotic susceptibility pattern of Anaerobes from surgical infections to avoid the emergence of Super bugs among anaerobes.
- Our study could demonstrate anaerobes as one of the major etiologic agents in surgical infection and utility of anaerobic culture technique in laboratories can help in accurate diagnosis and management.