

INCIDENCE OF ANAEROBES IN OBSTETRIC AND GYNAECOLOGICAL INFECTIONS

KULKARNI R. D. ● UDGAONKAR U. S. ● KULKARNI V. A. ● PAWAR S. G.
DHARMADHIKARI C. A. ● KUMBHAR D. V.

SUMMARY

Anaerobic organisms are met with in greater frequency than are expected to be, in various infections. Most of them are endogenous infections derived from the commercial flora. In our study of 60 cases 34 turned out to be positive for anaerobes, forming 57.67 per cent of the cases. Ten cases were positive for only anaerobes. *Bacteroides melaninogenicus* was the commonest anaerobe recovered and Coagulase negative staphylococci were commonest in aerobes. Females in the 21 to 30 years age group formed largest segment of patients. Implementation of specific anti anaerobic treatment as a routine in obstetric and gynaecological infections is suggested.

INTRODUCTION

Infection is the chief cause of morbidity in any community. The traditional methods of culture and treatment of infections according to sensitivity reports are often seen to fail. After the anaerobic renaissance it became evident that the unknown culprit is the more important one. (Pardnani 1981)

Non sporing anaerobes are among the normal flora of female genital tract. These commensal anaerobes are potential pathogens and found frequently in infections. (Willis 1977)

With this background, a study was undertaken to know the prevalence and incidence of anaerobic bacteria in obstetric and gynaecological in-

fections in our hospital.

MATERIAL AND METHODS

The cases admitted at Govt. General Hospital, Sangli were selected. They included cases of puerperal sepsis, post abortal sepsis, surgical wound infection, cases showing foul smelling vaginal discharge with or without fever etc. The case showing clinical signs and symptoms of pelvic inflammatory disease and pus on cul-de-sac aspiration were also selected. A small number of samples were collected on operation table which consisted of tubo-ovarian abscess, salpingitis and pelvic abscess.

The pus was collected in sterile penicillin bulbs filled up to the brim. Where swabs had to be used two swabs were used, one for Gram staining and the other transported in Stuart's

medium for culture.

Aerobic organisms were identified according to standard methods (Cruickshank et al, 1975). For anaerobic yield samples were processed according to Edelstein (Edelstein 1986). Anaerobic incubation was done in Dynox anaerobic jar.

OBSERVATION

The distribution of total number of 60 cases is shown in Table No. I. Thirty four cases were positive for anaerobes on culture (56.67 per cent). Ten (16.67 per cent) out of the 60 cases

grew pure anaerobes while 18 (30 per cent) were positive for pure aerobes. Seventy per cent of the samples (42) showed aerobic organisms and included cases showing pure aerobes and mixed infections. Out of the 34 cases positive for anaerobes 24 (40 per cent) were mixed infections. Two of the pure anaerobic infections were monomicrobial.

Seventy three anaerobes were isolated from 34 anaerobic infections. Gram negative, non sporing anaerobic bacilli were the predominant pathogens. Table no. II shows the distribution of

Table - I

Sr. No.	Group	No. of Cases	Percentage
1.	Total No. of cases studied	60	100.00
2.	Total No. of cases showing anaerobic growth	34	56.67
3.	Cases showing only anaerobes	10	16.67
4.	Cases showing only aerobes	18	30.00
5.	Sterile samples	8	13.33
6.	Cases showing mixed infection	24	40.00
7.	Total No. of cases showing aerobes	42	70.00

Table : II

Showing anaerobic and aerobic isolates

Sr. No.	Species isolated	No. of Organisms isolated	Percentage
1.	Bacteroides melaninogenicus	20	27.4
2.	B. fragilis	10	13.7
3.	B. Oralis	3	4.11
4.	Fusobacterium necrophorum	4	5.48
5.	B. capillosus	2	2.8
6.	F. nucleatum	1	1.4
7.	Clostridium tetani	2	2.8
8.	ANSGP bacilli	6	8.22
9.	Peptococcus assacharolyticus	11	15.07
10.	Peptostreptococcus anaerobius	7	9.59
11.	Ps. intermedius	4	1.4
Total		73	100.0

* Anaerobic Non Sporing Gram Positive.

Table - III
Age wise distribution

Age	Total No. of Cases	No. of cases showing anaerobes
11 - 20	07 (11.67%)	5 (71.43)
21 - 30	35 (58.33%)	16 (51.43)
31 - 40	11 (18.33%)	6 (54.55)
41 - 50	03 (5.0%)	3(100.0)
51 - 60	04 (6.67%)	2 (50.0)

isolates. Forty out of the 73 isolates were Gram negative bacilli. *Bacteroides melaninogenicus* was the commonest anaerobe recovered (27 per cent). It was followed by *Peptostreptococcus assacharolyticus* (15.07 per cent), *Bacteroides fragilis* (13.7 per cent) and *Peptostreptococcus anaerobius* (9.59 per cent) fifty seven aerobes were isolated from 42 cases.

Coagulase negative staphylococcus was most common among the aerobic isolates (25.00 per cent) fifty seven aerobes were isolated from 42 cases.

Coagulated negative staphylococcus was most common among the aerobic isolates (25.00 per cent) *Klebsiella pneumoniae* and *Escherichia coli* were the next common species accounting for 12 and 10 isolates respectively.

The age wise distribution of all the cases was noted. The youngest was a 14 year old unmarried girl coming for septic, criminal abortion. The oldest was a 58 year old lady suffering from carcinoma of cervix with pelvic inflammatory disease.

DISCUSSION

The incidence of anaerobic infections in the 60 cases studied by us was 57.67 per cent. Various studies report this incidence from 49.0 to 100.0 per cent (Swenson et al, 1973, Thadepalli et al 1973, Gupta 1978, Lalitha & Koshi 1980).

Ten of our cases yielded only anaerobes. Had

they been subjected to anaerobic culture only, the diagnosis could have been missed. Two of these were monomicrobial anaerobic infections. This observation is in favour of pathogenic potential of anaerobes. Twenty four specimens were positive for both aerobes and anaerobes. Ingham et al (1977) suggested that aerobes and anaerobes while aerobes produce factors essential for the growth of anaerobes such as naphaguinone which is closely related to VIT - k, Macdonald et al (1963) also had reported similar finding.

Fifty eight per cent of our cases fell in the age group of 21 to 30 years. Pregnancy is very common in this age group and so are normal deliveries, caesarean sections, MTPs and abortions. So genital tract infections are obvious in this group of patients.

In our study the samples were collected at Govt. General Hospital Sangli and processed at Dept. of Microbiology, Govt. Medical College, Miraj, situated 12 kms away. The incidence of anaerobic infections recorded by us was 56.67 per cent. It needs no stress to say that in ideal circumstances and well equipped anaerobic laboratory the incidence of anaerobic infections is much higher. So in case of female genital tract infections a clinician must always have a very high index of suspicion of anaerobes in lesion and specific treatment against them may be implemented as a routine.

REFERENCES

1. Cruickshank R, Duguid JP, Marmion BP, Swain RHA *Medical Microbiology, Volume II: The Practice of Medical Microbiology, 12th edition, 1975, Churchill Livingstone; Edinburgh, London and New York, 170-189.*
2. Edelstein MAC, *Processing clinical specimens for anaerobic bacteria, isolations and identification procedure in Baily and Scott's Diagnostic Microbiology 7th Edition, 1986, 500: The C. V. Mosby Company, St. Louis, Toronto, Princeton.*
3. Gupta U. *The Indian Practitioner 31: 271, 1978.*
4. Ingham H. R., Tharagommet D, Sisson P. R., Selkon J. B., Codd A. A., *Lancet 11: 1252, 1977.*
5. Lalitha M. D., Koshi G, *Ind. Medical Research 71: 701, 1980.*
6. Macdonald JB, Socransky S. S., Gibbons R. J., *J. of Dental Research 42: 529, 1963.*
7. Pardnani D. S. *Indian Journal of Surgery, Special Supplement 43: 56, 1981.*
8. Swenson R. M., Michaelson T. C., Daly M. J., Spaulding E. H., *Obstet and Gynec. 42: 538, 1973.*
9. Thadepalli H, Gorbach S. L., Keith L, *Am. J. of Obstet. and Gynec. 117: 1034, 1973.*
10. Willis A. T., *Anaerobic Bacteriology: Clinical and Laboratory Practice, 3rd edition, 212: 1977, Butterworths, London - Boston.*