PROPHYLACTIC PRE-OPERATIVE SINGLE DOSES OF AMPICILLIN METRONIDAZOLE AND PENICILLIN AN ALTERNATIVE TO POST-OPERATIVE INJECTIONS

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SUMMARY

Infections are anticipated following pelvic and abdominal surgeries. The usual practice is to administer intravenous ampicillin, gentamycin and metronidazole. This needs a patent intravenous line and entails the risk of thrombophlebitis, so the efficacy of pre-operative administration of ampicillin, penicillin and metronidazole was investigated on 700 patients forming 2 well-matched groups.

The drugs were given 12 hours prior to surgery and the results were compared. We found that this regime was convenient, economical and effective in reducing the incidence of subsequent infection.

INTRODUCTION

Finland (1960) said that nearly all competent surgeons now agree that the routine use of prophylaxis in clean operations is unnecessary and undesirable.

Gentle handling of tissues so as to ensure minimal tissue trauma, effective haemostasis and proper asepsis are most important for post operative infections. Since ideal conditions are never present all surgeons use prophylactic preoperative antibiotics to prevent infections.

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Burke (1961) showed that for the prophylaxis to be effective antimicrobials must be in the tissue at the time of bacterial contamination. At most of these infections are caused by mixed aerobic and anaerobic flora (Kaiser 1986) the use of intravenous metronidazole with other antibiotics usually ampicillin and gentamycin is a common practice. Just 2g of Tinidazole given orally 12 hours prior to surgery has been recommended by De and Misra (1983) and Cocks et al (1981).

MATERIAL AND METHODS

This study was done on 700 patients who underwent Caesarian Section or Abdominal or

Vaginal Hysterectomies. 350 (Group I) of these patients were given 12 hours prior to surgery - 2 gms. Metronidazole orally, 2 gm. Ampicillin and 1 vial LA_{12} Penidure Penicillin I/M (AST). They were not given any antibiotics postoperatively. Rest 350 patients (Group II) were not given anything preoperatively, but were given Ampicillin and metronidazole post-operatively by intravenous route.

The nature of the operation, anaesthesia and other antibiotics given were noted. Patients were observed for 7 days for evidence of infection i.e. purulent discharge from wound and clinical evidence of intra-abdominal infection. The data was analysed.

RESULTS

The 700 patients evaluated formed 2 groups that were comparable in mean age, nature of operation and type of anaesthesia.

Besides the test drugs 22% of patients in group II and 5% in group I received Gentamycin.

The incidence of wound infection was 2% in group I and 12.5% in group II which was statistically insignificant.

The difference in intra abdominal infection (3.8% group I and 5.6 group II) was also insignificant.

Table I

Sl. No.	Age in yrs.	Group - I		Group - II	
		No. of Patients	%	No. of Patients	%
1.	20 - 25	62	17.13	60	17.11
2.	25 - 30	75	21.47	73	20.86
3.	30 - 35	40	11.47	44	12.57
4.	35 - 40	38	10.85	36	10.11
5.	40 - 45	95	27.91	90	26.92
6.	45 - 50	40	11.17	47	12.43
	Total	350		350	

Table II

Sl. No.	Type of Operation	Group - I				Group - II			
		Epidural Anaest-hesia	General Anaest-hesia	No. of patients	%	Epidural Anaest hesia	General Anaest-hesia	No. of patients	%
1.	LSCS	125	25	150	42.95	129	21	150	42.95
2.	Abdominal hysterectomy	141	9	150	42.95	110	40	150	42.95
3.	Vaginal Hysterectomy	49	1	50	14.1	36	14	50	14.1

Table III

Incidence of wound infection and intra abdominal infection

Type of Infection	Group I	Group II
Wound	9.2%	12.5%
Intra abdominal infection	3.8%	5.6%

DISCUSSION

For the prophylaxis to the effective the antimicrobials have to be in the tissue in adequate concentration at the time of bacterial contamination (Kaiser 1986). After delay of only 3-4 hrs. the bacteria have a "head start" (Burke 1961). The antimicrobials must be effective against most, if not all, likely pathogens so as to break the synergy between aerobes and anaerobes (Ledger 1986). The usual practice is to give I/V Ampicillin and Metronidazole preoperatively. This necessitates an intravenous line which may cause thrombophlebitis and also increases the cost of therapy.

In most of the clean elective cases, single preoperative therapy can be effective. De and Misra (1983) showed the efficacy of an oral 2g. dose of Tinidazole prior to surgery.

So we recommend single doses of Metronidazole 2 gram, Ampicillin 1 gram and LA_{12} (Penidure Penicillin) 1 vial pre-operatively, 12 hours prior to surgery to cut down cost and post operative work.

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