ANTIBIOTIC PROPHYLAXIS FOR ABDOMINAL HYSTERECTOMY

G. MELE - P. LOIZZI - P. GRECO - G. GARGANO
G. VARCACCIO GAROFALO - A. BELSANTI
II Obstetric and Gynecology Clinic - University of Bari (Italy)
(Director: Prof. R. Nappi)

Summary: Three different regimens of antibiotic treatment have been employed in order to evaluate their efficacy as a profilaxis for abdominal hysterectomy.

Two short term administrations (Cephtriaxone and Cephamandole plus Tobramycine) and a conventional full dose treatment (Cephazoline) have been compared over a group of homogeneous patients. No significant differences, except a reduction in postoperative time spent in hospital, have been found among the groups. A reduction in urinary tract infection has also been reported with a single-dose antibiotic prophylaxis.

INTRODUCTION

The use and the choice of an antibiotic regimen during gynaecological abdominal operations has been a debated issue for a long while. No single regimen has been proved to be the best, although it has, recently been shown that single dose perioperative antibiotic prohylaxis significantly reduces postoperative infectious complications (Honang, 1984). Bacterial contamination via the abdominal and vaginal wounds, and therefore infection or raw areas, are the commonest cause of post-hysterectomy morbidity. Chemiotherapy has been proved to decrease the number of bacteria from the vagina contaminating the pelvic peritoneum (Helm, 1986). A direct relationship between the degree of bacterial presence and morbidity has never been demonstrated, therefore a number of factors including "skill" of the operator and "difficulty" of the procedure could alter any attempt to prove which regimen gives the most valuable results. In the Authors' Institution the use of a short term prophylaxis for abdominal hysterectomy is routine. In this study the attempt has been to evaluate prospetively the results of three regimens of chemoprophylaxis in standard conditions.

MATERIAL AND METHODS

Some of the patients (370) admitted for abdominal hysterectomy in the 2nd Department of Obstetrics and Gynaecology (University of Bari), during the period January 1983 - January 1987, were selected on the grounds of recognized characteristics. These criteria were:

- no known allergy to antibiotics;
- no impairment in renal function;
- no recognizable infection present;
- no antibiotic treatment in the last month.

Three sub-groups (A, B and C) were established and each patient assigned to one according to the dav of admission.

Group A (70 patients): Full dose treatment (1 g of Cephazoline t.d.s., for 5 days from the day of operation).

Group B (120 patients): Short term prophylaxis with Cephamandole (2 g before entering the theatre and five 1 g doses at hourly intervals) plus Tobramycine (150 mg soon after catheter removal, if performed 2 days after operation, or 150 mg daily in case of prolonged catheterism, starting 1 day after Cephamandole suspension).

Group C (180 patients): Single dose prophylaxis with Cephtriaxone (1 g before entering the theatre and the same dose repeated soon after catheter removal for any case with a catheterism longer than 24 hrs).

All the patients had routine investigations and previous medical historv recorded. The following parameters were taken into account in order to define postoperative complications.

1) Febrile morbility (temperature rise above 38 °C in two separate controls, excluding the 1st day after operation).

Clin. Exp. Obst. Gyn. - ISSN: 0390-6668
XV, n. 4, 1988

2) Local infection (pelvic infiltrates).
3) Length of postoperative hospital stay (expressed as percentage of patients requiring more than the average 8 days permanence).
4) Urinary tract infection (positive midstream urine culture 4 days after antibiotic suspension).

The chi-square test was used in order to verify statistical differences in the results.

Table 1. – *Preoperative medical risk factors.*

	Group A (70 patients)	Group B (120 pts.)	Group C (180 pts.)
Age	49.80±13.5	51.3±15.0	50.23±8.5
Parity	4.10±2.2	3.93±1.75	4.17±2.3
Obesity	7.8%	9.3%	10.5%
Preoperative HB	12.9±1.9	13.29±1.9	13.20±1.7
Hypertension	11.4%	16.6%	13.3%
Diabetes	14.2%	19.1%	8.3%
Peripheral vasculopaty	7.1%	7.5%	16.6%
Previous operation	2.9%	12.5%	11.6%

Table 2. – *Preoperative surgical risk factors.*

	Group A (70 patients)	Group B (120 pts.)	Group C (180 pts.)
Length of operation (min)	97.8±20.3	100.5±28.4	99.5±25.7
Postoperative HB	12.0±1.3	11.70±1.4	11.4±1.6
Length of catheterism (min)	110.20±20	115.0±36.5	103.0±45.2

RESULTS

The groups presented no statistical difference when matched for the same preoperative factors predisposing to infection, as shown in tables 1-2.

As to clinical judgment no gross difference was found in the postoperative parameters on examinations.

Febrile morbidity and length of postoperative hospital stay were significantly lower in both the short-term treated groups.

DISCUSSION

It has been proposed that the duration of the procedure is the single most important factor in determining the incidence of postoperative wound infections in patients receiving antibiotic prophylaxis (Shapiro, 1982). In the present study this bias has probably been overcome by the same level of experience of the different teams alternating in the operating theatre (table 2).

No clinical parameter, relating to postoperative morbidity, was significantly influence by one of the antibiotic regimes. A reduction in the number of days in hospital after the operation was found with both kinds of prophylaxis. Whether this fact corresponds to a real improvement in terms of morbidity, is very questionable.

Since a single or double dose administration represents a reduction in costs and

Table 3. – *Postoperative results.*

Febrile morbidity	25.7% (18/70)	20.8% (25/120)		8.3% (15/180)
		$\chi^2 = 210.9$	$p < 0.01$	
Local infection	11.4% (8/70)	12.5% (15/120)		3.3% (6/180)
		$\chi^2 = 8.51$	$p < 0.05$	0.01
Postoperative stay	57.1% (40/70)	16.6% (20/120)		15.5% (28/180)
		$\chi^2 = 40.33$	$p < 0.01$	
Significant bacteriuria	42.8% (30/70)	23.3% (28/120)		11.6% (21/180)
		$\chi^2 = N.S.$		

obviates the potential danger of selecting resistant bacterial strains, and since the combination of two agents was not shown to be more effective, the Authors feel that a single-drug short-term chemioprophylaxis is to be chosen as standard treatment during abdominal hysterectomy.

BIBLIOGRAPHY

1) Cartwright P. S., Pittaway D. E., Jones H. W. III, Entman S. S.: *Obstetrical and Gynaecological Survey, 39*, 537, 1984.
2) Guglielmo B. J., Hohn D. C., Koo P. J., Hunt T. K., Sweet R. L., Conte J. E. jr.: *Archives of Surgery, 118*, 943, 1983.
3) Helm C. W., MacDonald C. Honang E. T.: *Journal of Obstetrics and Gynaecology, 6*, 564, 1986.
4) Honnag E. T., Watson C., Howell R., Chapman M.: *Journal of Antimicrobial Chemiotherapy, 14*, 529, 1984.
5) Hapiro M., Munoz A., Tager I. B., Schenbaum S. G., Pilk B. F.: *New England Journal of Medicine, 307*, 1661, 1982.