

# TINIDAZOLE IN PREVENTION OF POST OPERATIVE INFECTIONS IN GYNAECOLOGICAL SURGERY

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## SUMMARY

This study includes 50 cases in trial group in whom a single oral dose of 2 gm tinidazole was administered on the night before the operation with 50 control cases in whom it was not administered.

All cases had routine antibiotics post operatively. Critical evaluation of records for postoperative complications was done. Prophylactic single oral dose of tinidazole reduced the infection rate and hospital stay of the patients.

### Introduction

The nonsporing anaerobes which constitute a large part of normal bacterial flora of female genital tract (Gobach *et al* 1973) is the main cause of infection, the fact stressed by many workers (Sewenson 1973; Gobach *et al* 1974; Willis *et al* 1975). Encouraging result of metronidazole in prophylaxis of anaerobic infections in gynaecological surgery (Willis *et al* 1974) provided an impetus to carry out this study with Nitromidazole.

Tinidazole is a nitromidazole derivative having following empirical formula 1-(2-(ethylsulfonyl)-2 methyl 5-nitromidazole. *In vitro* studies Tinidazole is shown to be bactericidal against anaerobe bacteroid fragilis in significantly lower concentrations than metronidazole (Jopikii 1977 a). An oral dose of 2 gm tinidazole produces peak serum value of 50 µg/ml within 1-2 hours with the biological half life of 13 hours (Monro 1974). This higher serum con-

centration when compared within *in vitro* concentration of 2 µg/ml (Jopikii 1977 b) it is expected to produce bactericidal level in serum for 2-3 days.

### Material Method

This study was conducted at Kasturba Hospital, MGIMS, Sevagram in the Department of Obstetrics and Gynaecology in the year 1985 to 1986. Of the 100 cases, 50 cases received Tinidazole and served as trial group with 50 cases as control. These cases were admitted as routine for major gynaecological surgery and none of them had previous history of antibiotic therapy in present past. None of the cases had any infection. The trial group had oral single dose of tinidazole 2 gm (4 tablets of 0.5 gm each) at the night prior to the day of surgery. All these 100 cases (control and trial group) routinely received penicillin and streptomycin antibiotic injection post operatively.

The cases who developed the infections, the antibiotics were changed depending upon aerobic culture and sensi-

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tivity report of vaginal swab or discharge from abdominal wound. At the time of discharge a critical evaluation of the records regarding the complications and duration of hospital stay was done.

#### Observations and Results

In the present study majority of the patients were below 40 years of age in both the groups. Prolapse of uterus and fibromyomas were the commonest indications of operation in maximum number of 48% and 54% of cases respectively

(Table I). Operative procedures adopted in both the groups are shown in Table II. Overall morbidity in trial group was 10% as compared to control group in 60%. The febrile morbidity was seen in maximum of 60% cases in control group as compared to 10% in trial group (Table III). The maximum of 94% of cases of trial group were discharged from the hospital within 10 days while 74% of cases in control group had to stay in hospital exceeding 10 days. In trial group none of the patients stayed beyond 15 days (Table IV).

TABLE I  
Indications

Indications	Trial group		Control group	
	No.	%	No.	%
Prolapse uterus	15	30	15	30
Fibromyoma	12	24	9	18
Dysfunctional uterine bleeding	11	22	9	18
Tubo-ovarian mass	2	4	7	14
Ovarian cyst	3	6	8	16
Unhealthy cervix	1	2	1	2
Carcinoma cervix	1	2	—	—
Post menopausal bleeding with adenomatous hyperplasia	5	10	1	2
All groups	50		50	

TABLE II  
Operative Procedures

Surgery	Trial group		Control group	
	No.	%	No.	%
Abdominal hysterectomy	27	54	20	40
Vaginal hysterectomy	15	30	15	30
Laparotomy for removal of to mass	2	4	7	14
Ovariectomy	3	6	8	16
Myomectomy	1	2	—	—
Wertheim's hysterectomy	1	2	—	—
Abdominal hysterectomy with intestinal resection anastomosis	1	2	—	—
All groups	50		50	

TABLE III  
Post Operative Morbidity

	Trial group		Control group	
	No.	%	No.	%
Fever > 38°C	5	10	30	60
Urinary tract infection	1	2	6	12
Purulent vaginal discharge	3	6	7	14
Abdominal wound infection	5	10	20	40
Pelvic peritonitis	—	—	9	18

TABLE IV  
Hospital Stay in Two Groups

No. of days	Trial group		Control group	
	No.	%	No.	%
Upto 10	47	94	13	26
11-15	3	6	19	38
> 15	—	—	18	36

#### Discussion

The single oral dose of 2 gm tinidazole definitely reduced infections following major gynaecological surgery. The tinidazole acts against anaerobic mixed infection, the assumption which is supported by Ledger (1975); Ohm and Galask (1976). The infections were evenly distributed by age and indications for surgery. Our result is compatible with the report of De, B and Mishra (1983). This single dose procedure is cheaper and simpler than 7 days course

of metronidazole. But this study needs further evaluation of development of drug resistance to tinidazole.

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