

Monilial and Trichomonal Vaginitis

Topical Treatment with Povidone-Iodine Preparations

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■ *A regimen of treatment for vaginitis combining the use of a povidone-iodine solution for swabbing, a povidone-iodine vaginal gel for application at night and a povidone-iodine douche for use in the morning, was evaluated in 93 courses of treatment in 87 patients with monilial or trichomonal vaginitis or a combination of both.*

In monilial vaginitis, symptoms were cleared and negative laboratory results obtained in one to three weeks in all 74 courses of treatment. These results were obtained within one week in 52 cases and within two weeks in another 17.

In four of five patients with trichomonal vaginitis, symptoms were cleared within three weeks. In the fifth, negative laboratory results were obtained but a mild discharge persisted at the end of the fourth week.

In 14 courses for combined infections, symptoms were cleared within three weeks in 13, and the pathogens were absent in those patients within four weeks. In one patient the disease did not respond.

MONILIAL AND TRICHOMONAL vaginitis frequently occur simultaneously,^{1,2} and control of trichomoniasis with specific agents is often followed by a flareup of moniliasis.^{1,3,5} Whereas trichomonal vaginitis is considered by some observers to be largely a venereal disease,^{2,6,7} monilial infection and reinfection of the vagina may issue from the intestinal tract by way of the perineal route.^{8,9}

Both *Trichomonas vaginalis* and *Candida albicans* are often found in an apparently healthy vagina.^{2,9,10} The triggering mechanisms that turn the saprophytic *Candida* or the asymptomatic trichomonad into a pathogenic organism have not been fully explained, but reduction of Lactobacilli in the presence of clinical trichomonal or monilial vaginitis has been noted.^{5, 11-13} Among predisposing factors suggested for clinical monilial vaginitis are pregnancy, diabetes mellitus,^{13,14} and administration of broad-spectrum antibiotics.^{10,13,15} Most recently the use of oral progestational contraceptive products has been implicated in the incidence

of both monilial and trichomonal vaginitis.^{16,17} Antibiotic administration has also been reported to favor the development of trichomoniasis.² It has been suggested, however, that the ratio of monilial and trichomonal vaginal infection is shifting to a preponderance of monilia largely as the result of the development of antibiotic therapy.^{15,18,19}

Both forms of vaginitis produce symptoms of varying severity, mainly vulvar pruritus, pain, burning sensations, and a vaginal discharge which, in trichomoniasis, is often malodorous.²⁰ The emotional factor has been especially noted in women with trichomoniasis.^{20,21}

In view of the association between monilial and trichomonal vaginitis, local therapy which promises to control both is obviously desirable. Many agents have been tried, but no single method has been satisfactory in all respects. Thus, iodine was at one time used successfully in the therapy of both monilial and trichomonal vaginitis,^{22,23} but the concentrations required proved painful on application.²³

More recently povidone-iodine, a complex of

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polyvinylpyrrolidone and iodine, has been introduced, and when topically applied it is reported to be microbicidal to both *Trichomonas vaginalis* and *Candida albicans* as well as to a variety of iodine-susceptible microorganisms with potential pathogenicity in the vagina.^{24,25} It is reported to be virtually non-irritating, and therefore less likely to cause pain on application.²⁵ It is available in a variety of forms suitable for use in the vagina, including a solution for direct swabbing, a douche and a vaginal gel.* Since it is water-soluble, it can be removed simply by washing with water, and is thus non-staining to skin and natural fabrics.²⁵

A trial of a regimen involving use of the povidone-iodine solution, douche and gel in trichomonal and monilial vaginitis was undertaken.

Materials and Methods

Ninety-four women between 19 and 43 years, with a mean age of 29, were originally included in the trial. Eighty-seven were evaluated. All complained of discharge and nearly all had additional symptoms of vaginitis as well (Table 1); overt physical signs, in addition to discharge, were noted in 58 patients (Table 2). Nine patients were pregnant. Using the hanging drop method for *Trichomonas vaginalis* and culture with Nickerson's medium for *Candida albicans*, the condition was diagnosed in the original 94 patients as moniliasis in 71, trichomoniasis in seven, and both concomitantly in 16. Six patients were treated for second episodes, presumably due to reinfection. In three cases the second episode occurred four to five months after therapy, and in two cases—one in a patient with suspected gestational diabetes—five weeks after therapy. The remaining recurrence of moniliasis was three weeks after cessation of therapy and it coincided with the return of the patient's husband after a month of absence. These recurrences brought the number of treatments initiated with the regimen under study to 100, of which 76 were for moniliasis, seven for trichomoniasis and 17 for a combination of the two conditions.

Following initial examination and taking of diagnostic smears, the vagina and cervix were painted with the povidone-iodine solution. The patient was instructed to apply one applicatorful of the povidone-iodine gel (approximately 5 gm) at bedtime and to douche next morning, using a dilution of 2 tablespoonfuls of the povidone-iodine

TABLE 1.—Distribution of Symptoms, 93 Cases of Vaginitis in 87 Patients

Symptoms	Monilial	Trichomonal	Trichomonal and Monilial
Discharge only	3	1	1
Discharge and itching	27	3	7
Discharge and burning	3	—	—
Discharge and pain	1	—	—
Discharge, itching, and burning	21	—	4
Discharge, itching, and pain	3	—	1
Discharge, itching, burning and pain	16	1	1
TOTALS	74	5	14

douche in 1 quart of warm water. This course was followed for six nights and mornings. On the seventh day the patient reported to the office, where symptoms were again noted and smears obtained for laboratory determination.

The course of treatment, consisting of the douche and gel regimen, was continued, with weekly examinations, for four weeks, or less if symptoms were cleared and laboratory results were negative. Patients were instructed to avoid sexual intercourse, or to engage in it only with the use of a condom by the sexual partner, during the course of treatment.

Treatment was recorded "effective" when symptoms were cleared and laboratory findings negative upon completion of the prescribed course. It was recorded "ineffective" (for purposes of the study) where symptoms persisted, or laboratory results were positive, upon completion of the full course of treatment.

Results

Seven patients did not complete the prescribed course of therapy and were not included in the evaluations. Results for the remaining 93 completed treatment courses (87 patients) are shown in Tables 3 and 4. The povidone-iodine regimen was evaluated as effective in 100 percent of treat-

TABLE 2.—Pertinent Physical Findings, 93 Cases of Vaginitis in 87 Patients

Erythema or lesions* of:	Diagnosis		
	Moniliasis	Trichomoniasis	Moniliasis and Trichomoniasis
Vulva	23	—	—
Vagina	3	1	1
Cervix	12	1	8
Vulva and vagina	1	1	1
Vulva and cervix	3	—	—
Vagina and cervix	—	—	2
Vulva, vagina and cervix	1	—	—
TOTALS	43	3	12

*Betadine Solution, Betadine Douche, and Betadine (Povidone-Iodine) Vaginal Gel, The Purdue Frederick Company, Yonkers, N. Y.

*Punctate areas, erosion, excoriation, inflammation, irritation.

ments for monilial vaginitis, in four out of five treatments for trichomonal vaginitis, and in 93 percent of treatments for combined infections.

Treatment was recorded as ineffective in one patient with trichomonal vaginitis in whom laboratory results were negative at the end of treatment but a mild discharge persisted, and in another with mixed infection which was not controlled within four weeks.

In the 74 evaluated courses of therapy for monilial vaginitis, symptoms were cleared and negative laboratory results obtained within one week in 52 patients, within two weeks in 17 and within three weeks in five.

Of the nearly 250 presenting symptoms recorded for all patients, 200 were reported as severe and the remainder as mild (Table 3). Nearly 90 percent of the severe symptoms were cleared within two weeks. Of the 50 mild symptoms, 45 were cleared within the first week and the other five the second week.

Results with the povidone-iodine regimen were evaluated as superior in 12 of 13 patients previously treated with other agents, and as about the same in one.

Seven of the nine pregnant patients had monilial vaginitis. Symptoms were cleared and laboratory results negative by the end of the first week in six of them, and by the end of the second week in the seventh. Two pregnant patients had trichomoniasis and moniliasis. Symptoms were cleared and laboratory results negative within three weeks in one and four weeks in the other.

Of 53 patients who reported "immediate relief" following the swabbing of the vagina with the povidone-iodine solution, 20 had complained of itching before therapy; 16 of itching and burning; three of itching and pain; ten of itching, burning and pain; three of burning only, and one of discomfort due to discharge.

Itching or discharge was still present in the seven patients who dropped out of the study—four after the third week, two after the second week and one after the first week.

Patients acceptance of the povidone-iodine vaginitis regimen was generally good. Of the 94 women initially in the study, 66 voiced no objections to the medication, 17 indicated that the gel application was "messy," five that the procedure was inconvenient, and six that the gel stained their linens.

TABLE 3.—Relief of Individual Symptoms with Povidone-Iodine Vaginitis Regimen in 87 Patients (93 Courses of Therapy)

Diagnosis	Symptom	No.	Severe	Mild	Relief Within			Not relieved
					1 wk.	2 wk.	3 wk.*	
Monilial vaginitis (74 courses of treatment)	Itch	67	54	13	58	6	3	—
	Burning	40	30	10	34	4	2	—
	Pain	20	9	11	17	2	1	—
	Discharge	74	68	6	57	13	4	—
Trichomonal vaginitis (5 courses of treatment)	Itch	4	3	1	2	2	—	—
	Burning	1	—	1	1	—	—	—
	Pain	1	—	1	1	—	—	—
	Discharge	5	5	—	—	—	4	1†
Trichomonal and monilial vaginitis (14 courses of treatment)	Itch	13	9	4	9	4	—	—
	Burning	5	2	3	3	2	—	—
	Pain	2	2	—	2	—	—	—
	Discharge	14	14	—	—	5	8	1

Relief of Symptoms by Severity, All Patients

Symptom	No.	1 wk.	Relief within		Not relieved
			2 wk.	3 wk.*	
Itching 84					
Severe	66	52	11	3	—
Mild	18	17	1	—	—
Burning 46					
Severe	32	27	3	2	—
Mild	14	11	3	—	—
Pain 23					
Severe	11	9	1	1	—
Mild	12	11	1	—	—
Discharge 93					
Severe	87	51	18	16	2
Mild	6	6	—	—	—

* All symptoms were cleared within three weeks in the successful cases.

† Laboratory reports negative, but a mild discharge persisted after four weeks of therapy.

TABLE 4.—Results in Symptomatology in 93 Courses of Therapy (87 Patients) Following Povidone-Iodine Vaginal Regimen

Type of vaginitis	No. Pts.	All symptoms* cleared within			Not cleared	Immediate effect of swabbing of vagina with PVP-I Solution on initial visit		
		1 wk.	2 wk.	3 wk.		Relief	No relief	Not determined
Monilial	74	52	17	5	—	49	23	2
Trichomonal	5	—	—	4	1†	—	4	1
Trichomonal and Monilial	14	—	3	10‡	1	4	10	—
TOTALS	93	52	20	19	2	53	37	3

*Laboratory results were negative in all cases where symptoms were cleared, except as indicated. In the successful cases, all symptoms were cleared within three weeks.

†Laboratory reports were negative, but a mild discharge remained after four weeks of therapy.

‡In two patients, hanging drop studies were negative for trichomonads after four weeks of therapy.

Ten of these 28 added that they were pleased with the results of the regimen.

Side Effects

Side effects were minimal. A patient with moniliasis complained of a slightly tender and non-pruritic eruption confined to the plantar and palmar skin following one week of the povidone-iodine vaginitis regimen. This was diagnosed clinically and microscopically as consistent with dermatitis medicamentosa. Medication was discontinued and the eruption cleared within a week. In the week of treatment before the eruption developed, severe vaginal itching and discharge were eliminated and a negative laboratory report was obtained.

Two patients with vulvitis reported "burning," slight in one case, on the first day and first two days respectively of treatment with the povidone-iodine gel. "Burning" was one of the presenting symptoms of these patients before therapy. That it ended after the first two days of therapy may have been due to the treatment.

Discussion

The povidone-iodine regimen—utilizing a solution, douche and gel—was effective, in this series, in the therapy of monilial vaginitis; it appeared to be promising in the treatment of trichomonas vaginitis, as well, but the number of cases was insufficient for definitive judgment. A follow-up report will be submitted after additional clinical experience.

One patient had plantar and palmar eruptions consistent with dermatitis medicamentosa after one week of the test regimen. The signs disappeared upon discontinuance of therapy. Two patients with vulvitis who had "burning" as a presenting symptom, reported persistence of this

complaint for one and two days respectively following initiation of gel therapy.

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