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CLINICAL STUDY ON LEUCORRHOEA WITH SPECIAL REFERENCE TO CERVICAL EROSION WITH TOPICAL APPLICATION OF ACACIA CATECHU LINN.F WILLD

[1]Goswami Deepak Kumar [2]Majhi Pramoda Kumar
[1]Assistant Professor ,Prasuti Tantra &Stree RogaGovt. Ayurvedic College & Hospital, Guwahati, Assam
[2]Professor , Prasuti Tantra& Stree Roga Govt. Ayurveda College And Hospital,Bilaspur ,Chhattishgarh

ABSTRACT: Leucorrhoea due to cervical erosion is the most common Gynaecological disease which affect the womens psychological status & Genito- urinary problems. Clinical study was done 30(thirty)patients of different clinical sign & symptoms of white discharge, cervical oedema, pain ,burning, itching in vulvovaginal region ,degree of aneamia(Hb%),urine examination,vaginal smear examination

Keywords:*Khadira churna*,(Acacia catechu),reproductive age group, cervical erosion, white discharge, pain,burning, itching, cervical oedema.

INTRODUCTION: Leucorrhoea is a common complaint in the women and about 70% of female suffers from leucorrhoea(*swetapradar*) in their lifetime. Though various etiological factors are responsible for leucorrhoea, still erosion of cervix is an important factor for which medical treatment has very little effect. In Ayurvedic classic *swetpradar*(leucorrhoea) comes under yoni *rogas* means excessive white discharge. Leucorrhoea word is synonymous with word *swetpradar*. Leucorrhoea disease is caused by *yonivyapad* & vitiation of *kapha dosha* influence by abnormal diet, abnormal mode of living, menstrual disorder, defective formation of ovum ,evil power etc. cervical erosion also described by Ayurvedic classic as *sphota,vrana,karnini yoni vyapad*. The word erosion comes from latin word eroder which means an eating or gnawing in transition zone. The cervical erosion is not an ulcer manifestation; this is benign condition and may turn into malignancy. It is the development of reddened area on portio vaginalis around the external os of the cervix. The squamous epithelium may be arranged in a regular pattern & sometimes it proliferate and forms a villous projection as pappillary erosion,which usually continous by columnar epithelium .The squamous epithelium covering of the vaginal part of cervix is replaced by columnar epithelium, which is usually continuous with that lining of the endo cervix.There are three type of erosion i.e simple flat, pappillary, follicular & nabothenian follicle.This disease occurs due to physiological causes like during pregnancy,purperium,effect of sex hormone,certain infection,pathological as acquired lesion result from hyperplasia of epithelium due to effect of hormone,oral contraceptives effect &other causes like congenital,environmental and certain diet habit. Hence a cheaper,effective,and widely available drug was to be searched to overcome the dreadful disease. Acacia catechu i.e. *khadira sara churna* is described in Ayurvedc classic was taken for the clinical trial in post graduate dept of prasuti tantra & stri roga.

AIM & OBJECTIVES: To evaluate the efficacy of *khadira* powder on leucorrhoea (*swetapradar*) as cardinal features in cervical erosion.

MATERIALS & METHODS: The study was carried out in post graduate department of prasuti tantra & stree roga,GAM,puri. Finally 30 cases were selected according to to the framed selection criteria presence of white discharge,pain,burning,itching,cervical oedema.

EXCLUSION CRITERIA: Patients having positive pap smear,positive VDRL,diabetic cases,less than 7gm% Hb,presence of other infective organisms.

TRIAL DRUGS & ITS PREPARATION: *Khadira sara* procured from reliable source was collected and made to fine powder in pharmacy of GAM puri & stored in an air tight jar container to be used.

METHODS OF ADMINISTRATION OF DRUGS:

TRIAL DRUG:Trial drug was applied to all the patients for 15 days after completion of menstrual cycle. The patients were in lithotomy position,after irrigation of the vaginal canal with normal saline,the cervix was well exposed with the help of posterior & anterior vaginal wall retractors and eroded portion of the cervix was dusted with fine powder of *khadira*.

PLACEBO DRUG: only vaginal irrigation (*yoni prakshalana*)was done with saline water(normal saline) for the same duration of treatment as trial group. No oral medication was given during the course of treatment & patients were advised to continue normal diet regimen for both the groups.

STUDY DESIGN: It is a comparative clinical trial on 30 number of cases ,divided into two group i.e. trial & placebo, having 20 & 10 nos of cases respectively.The selection was random. All patients were recommended similar *ahar* & *vihar* and advised to avoid *kapha & vata vardhak ahara & vihara*.

Group A-: The trial group was treated with trial drug *khadira churna* after irrigating the vaginal canal with normal saline

Group B-:the placebo group was treated with normal saline water only.

A.T.- After treatment. Vs-versus B.T.-Before treatment

T1- --B.T. vs A.T.-effectiveness of trial drug was assessed.

T2---B.T. vs A.T. – effectiveness of the placebo drug was assessed.

ASSESSMENT OF CASES: The cases were assessed by subjective & objective sign & symptoms of before treatment & after treatment of cervical erosion,white discharge,cervical oedema,pain,burning,itching,Hb%,vaginal smear examination including vaginal Ph,urine examination.

During treatment with trial drug, attention was given to note the development of any adverse effect ,toxicity& intolerance etc.

STATISTICAL ASSESSMENT OF RESULT: The mean±S.D before treatment of each sign & symptoms was compared with that of the after treatment. The pair t- test was used for test of significances & different sign & symptoms were assessed through p- value.

ASSESSMENT SCALE OF SIGNS & SYMPTOMS: Assessment of scale for different sign & symptoms were used for grading of severity of disease.

1) Cervical erosion

G3- Badly eroded cervix(> 75%)

G2-Both lips are eroded(50-75%)
G1-one lip is eroded(49%)
G0-no erosion
2) Discharge P/V
G3- use of 4 or more pads/day
G2-use of 2 -3 pads/day
G1-use of one pad/day
G0-no erosion
3) pain
G3- complete disturbance of daily routine work
G2- partial disturbance of daily routine work
G1-without disturbance of daily routine work
G0-no pain
4) Burning
G3- continous burning
G2-intermittent burning
G1-occasional burning.
G0-no Burning
5) Itching
G3-hampering of daily routine work along with disturbance in sleep.
G2-intermittently with partial hamper on daily routine work.
G1-occasionally.
G0-no itching
6) HB%(degree of anaemia)
G3- between 8-9 gm%.
G2 - >9 – 10 gm%.
G1- >10 gm% -11gm%.
G0 - > 11gm%.
7) VAGINAL SMEAR
A)Vaginal PH
G3- 4 to <5
G2-5 to <6
G1-6 to 7.
G0->7
b) PUS CELL
G3-many in nos/HPF
G2-few in number /HPF
G1-occasional found /HP
G0-absent
C) Epithelial cell
G3-many in nos/LPF
G2-few in number /LPF
G1-occasional found /LPF
G0-absent
8) IN URINE EXAMINAION
a) PUS CELL
G3-many in nos/HPF
G2-few in number /HPF
G1-occasional found /HPF
G0-absent
b)Epithelial cell
G3-many in nos/LPF
G2-few in number /LPF
G1-occasional found /LPF
G0-absent

OBSERVATION , RESULTS -: Table no-1 Showing the chief complaints & associated symptoms of the patients.

Si no	complaints	No of cases	Percentage(%)
1	White dicharge	30	100
2	constipation	10	33.33
3	backache	10	33.33
4	Frequent micturition	9	30
5	General weakness	12	40
6	Loss of appetite	3	10
7	Pain in vagina	13	43.33
8	Burning in vagina	18	60
9	Itching in vagina	13	43.33
10	Psychological upset	30	100

It was observed that out of 30 cases 30(100%)patients were complaining of white discharge p/v, 10(33.33%) constipation, 10(33.33%)backache, 9(30%)frequent of micturition, 12(40%)general weakness, 3(10%) loss of appetite, 13(43.33%)pain in vagina, 18(60%)burning vagina, 13(43.33%)itching in vagina, 30(100%) were found psychological upset.

Table no -: 2 Showing the quantity of discharge before treatment & after treatment in the trial & placebo group of patients.

Si no	Quantity of discharge	Trial group		P*	Placebo group		P*
		B.T	A.T		B.T	A.T	
1	mild	0	10	79.16	2	4	11.11
2	moderate	12	0		8	6	
3	profuse	8	0		0	0	

p- percentage of improvement.After treatment with the trial drug, the percentage of improvement of quantity of discharge is 79.16%.In placebo group the % of improvement of quantity of discharge is 11.11%.

Table no -: 3 -:Showing the degree of cervical erosion before & after treatment of trial & placebo group of patients

Si no	degree of cervical erosion	Trial group		P*	PLAEBO GROUP		P*
		B.T	A.T	64.44	B.T	A.T	11.11
1	0	0	11		0	0	
2	1	8	7		6	6	
3	2	8	2		4	4	
4	3	4	0		0	0	

N=30 p*- % of improvement.After thorough clinical analysis we found that after the treatment with the trial drug the % of improvement of cervical erosion is 64.44% and no improvement in placebo group.

Table no 4-:Showing the cervical edema before & after treatment of trial & placebo group of patients. N=30

Si no	Cervical edema	Trial group		P*	Placebo group		P*
		B.T	A.T	28.57	B.T	A.T	0
1	present	7	5		1	1	
2	absent	13	15		9	9	

P*-- % of improvement.After treatment with the trial drug, the % of improvement cervical edema is 28.57% &no improvement seen in placebo group.

Table no-5-: showing the symptoms-pain, burning, itching before & after treatment of trial & placebo group of patients.

Sno	Symptoms	Trial group								P*								P*
		B.T & A.T Degree Of Severity									B.T & A.T Degree Of Severity							
		G0	G1	G2	G3	G0	G1	G2	G3		G0	G1	G2	G3	G0	G1	G2	G3

1	pain	6	12	2	0	13	7	0	0	56.25	9	1	0	0	9	1	0	0	0
2	Burning	2	6	9	3	7	7	6	0	42.42	0	5	5	0	1	7	2	0	26.67
3	itching	7	5	8	0	11	6	3	0	42.86	2	7	1	0	3	7	0	0	22.22

P*- % OF IMPROVEMENT G1-mild, G2- moderate , G3-Severe. After the trial group cases attained 56.25%, 42.42% & 42.86% improvement in case of pain, burning & itching respectively. In placebo group no improvement observed in case of pain but in burning & itching the improvement was 26.67% & 22.22% respectively.

Table no 6-: showing epithelial & pus cell in vaginal smear examination before & after treatment in trial & placebo group of patients.

Sno	Vaginal smear	Trial group B.T & A.T Degree of Severity							P*	Placebo group B.T. &A.T Degree of Severity							P*
		G1	G2	G3	G0	G1	G2	G3		G1	G2	G3	G0	G1	G2	G3	
1	Epithelial cell	7	12	1	3	5	12	0	14.71	8	2	0	2	3	5	0	13.33
2	Pus cell	12	6	2	6	12	2	0	46.67	8	2	0	2	7	1	o	25

P*=Percentage of improvement. After the treatment of trial group cases attained 14.71 % &46.67 % improvement in case of epithelial cell & pus cell respectively. In placebo group cases attained 13.33% &25% improvement in both cell respectively.

Table no -7 Showing the pus cell &epithelial cell in urine examination before and after treatment in trial & placebo group of patients.

Sino	Urine examination	Trial group B.T & A.T Degree Of Severity							P*	Placebo group B.T. & A.T Degree Of Severity							P*
		G1	G2	G3	G0	G1	G2	G3		G1	G2	G3	G0	G1	G2	G3	
1	Epithelial cell	8	12	0	2	8	10	0	12.05	7	3	0	1	6	3	0	07.69
2	Pus cell	6	14	0	2	12	6	0	29.41	6	4	0	0	8	2	o	14.29

P*= % of improvement. After the treatment the trial drug group cases attained 29.41% &12.5% improvement of pus cell &epithelial cell.In placebo group cases attained 14.29% &7.69% improvement in pus cell & epithelial cell respectively.

Table no -8 Showing the HB% before & after treatment in trial & placebo group of patients.

Si no	HB% in grams	Trial group		P*	Placebo group		P*
		B.T	A.T	8.57	B.T	A.T	0
1	8---9	5	3		2	2	
2	>9-10	12	13		5	5	
3	>10-11	2	3		3	3	
4	>11	1	1		0	0	

P*= % of improvement.After the treatment of trial group cases attained 8.57 improvement & no improvement in placebo group.

Table no 9. Showing the clinical assessment of result of trial & placebo group patients.

Si no	Clinical assessment	Trial group	%	Placebo group	%
1	cure	4	20	0	0
2	Maximum improvement	7	35	0	0
3	Moderate improvement	5	25	0	0
4	Mild improvement	4	20	2	20
5	No improvement	0	0	8	80

P* = percentage The clinical assessment of result shows that after treatment under the trial group out of 20 cases 4 achieved cure(20%), 7 maximum improvement(35%), 5 moderate improvement (25%) & 4 attained mild improvement (20%). Under placebo group ,2 attained mild improvement (20%) & attained no improvement (80%).

Table no 10-: Statistical analysis showing the effectiveness of the trial drug to different sign & symptoms.

S no	Sign & symptoms	mean±SD	d.f.	t-value	p-value	remarks
1	discharge	B.T 2.4± 0.50 A.T O.55± 0.51	19	14.04	<0.001	Highly significant at 0.1 % level
2	Cervical erosion	B.T 1.8± 0.77 A.T 0.6 ±0.75	19	13.08	<0.001	Highly significant at 0.1 % level
3	Cervical edema	B.T 1± 0 A.T 0.57± 0.53	6	2.15	>0.05	insignificant
4	Pain	B.T 1.80± 0.28 A.T0.54 ±O.52	12	3.74	<0.01	significant at 1 % level
5	Burning	B.T1.65± 0.28 A.T0.95 ±0.83	17	5.09	<0.001	Highly significant at 0.1 % level
6	Itching	B .T1.62±0.51 A.T 0.92± 0.76	12	4.97	<0.001	Highly significant at 0.1 % level

7	epithelial cell (Vaginal. smear examination)	B.T 1.7± 0.57 A.T 1.45± 0.76	19	2.54	<0.05	significant at 5 % level
8	Pus cell (vaginal smear exam)	B.T 1.5 ± 0.69 A.T 0.8 ± 0.62	19	6.88	<0.001	Highly significant at 0.1 % level
9	Pus cell(Urine exam)	B.T 1.7 ± 0.47 A.T 1.2 ± 0.62	19	4.38	<0.001	Highly significant at 0.1 % level
10	Epithelial cell(urine examination)	B.T 1.6 ±0.5 A.T 1.2± 0.47	19	2.12	>0.05	insignificant level
11	HB%	B.T 9.68± 0.8 A.T 9.86 ±0.68	10	3.22	<0.01	significant at 1 % level

d.f. – degrees of freedom, t- test of significance, p- probability. < ---- less than ,> ----greater than, B.T- before treatment ,A.T.- after treatment.

STATISTICAL ANALYSIS SHOWING THE EFFECTIVENESS OF THE TRIAL DRUG.

In the statistical analysis,the mean± SD before treatment & after treatment of different sign & symptoms are compared with mean ± SD after treatment.in case of discharge the test of significance shows that the trial drug is significantly effective to give relief from discharge,with p-value <0.001.In case of cervical erosion it reduced mean ±SD, the test of significance shows that the trial drug is significantly effective to reduce cervical erosion with p-value <0.001.In case of cervical oedema reduced the mean± SD, the test of significance shows that the test drug could not improve the cervical edema after the treatment. In case of pain mean ±SD also reduced after treatment, the test of significance shows that the trial drug is significantly effective to reduced the pain with p- value <0.01.In case of burning mean± SD reduced after treatment.The test of significance shows that the trial drug is highly significant effective to reduced the burning with p-value <0.001.In case of itching, the mean ±SD reduced, the trial drug is highly significantly effective to reduced itching with p- value<0.01. In case of vaginal smear epithelial cell ,the drug is significantly effective to reduce the number of epithelial cell with p- value <0.05.In case of pus cell of vaginal smear also the trial drug is reduced the pus cell with p- value <0.001.

In case of epithelial cell of urine examination mean± SD also reduced. In case of pus cell of vaginal smear the trial drug is reduced the pus cell with p- value <0.001. Where as in case of epithelial cell of urine examination the trial drug is not significantly effective to reduced the epithelial cell with p- value>0.05.

In case of HB% the mean± SD reduced ,the test of significance shows that the trial drug is significantly effective to increase the HB% with p- value<0.01.

Table no-11. Statistical analysis shows that the effectiveness of the placebo to different sign & symptoms.

Si no	Sign & symptoms	mean±SD	d.f.	t-value	p-value	remarks
1	Discharge	B.T 1.8± 0.42 A.T 1.6± 0.52	9	1.5	<0.001	insignificant
2	Cervical erosion	B.T 1.4± 0.52 A.T 1.4 ±0.52	9		<0.001	Do not effect
3	Cervical oedema	B.T 1± 0 A.T 1± 0			>0.05	Do not effect
4	Pain	B.T 1± 0 A.T01 ±0			<0.01	Do not effect
5	Burning	B.T 1.5± 0.53 A.T 1.1 ±0.57	9	2.42	<0.05	just significant
6	Itching	B .T1.23±03.5 A.T 1.03± 0.32	7	1.67	>0.05	insignificant
7	epithelial cell (Vaginal smear examination)	B.T 1.5± 0.53 A.T 1.3± 0.82	9	1.51	>0.05	insignificant
8	Pus cell(vaginal smear exam)	B.T 1.2 ± 0.52 A.T 0.9 ± 0.57	9	1.97	>0.05	insignificant
9	Pus cell(Urine exam)	B.T 1.4 ± 0.52 A.T 1.2 ± 0.42	9	1.5	>0.05	insignificant
10	Epithelial cell(urine examination)	B.T 1.3 ±0.48 A.T 0.98± 0.42	9	1.98	>0.05	insignificant
11	HB%	B.T 9.9± 0.81 A.T 9.9 ±0.81	0			Do not effect

d.f. – degrees of freedom, t- test of significance, p- probability. < --less than ,> -greater than, B.T- before treatment ,A.T.- after treatment.

STATISTICAL ANALYSIS SHOWING THE EFFECTIVENESS OF THE TRIAL DRUG.

In the statistical analysis, the mean± SD before treatment & after treatment of different sign & symptoms are compared with mean ± SD after treatment.In case of discharge the test of significance shows that the trial drug is not significantly effective to give relief from discharge with p-value <0.05.In case of cervical erosion it reduce mean± SD, the test of significance shows that the trial drug is not effective to reduce cervical erosion, cervical edema,& pain .In case of burning mean± SD reduced after treatment. The significance shows that the trial drug is significant effective to reduced the burning with p-value <0.05. In case of itching, the mean ±SD reduced, the trial drug is not significantly effective to reduced itching with p- value>0.05. In case of vaginal smear epithelial cell ,the drug is not significantly effective to reduce the number of epithelial cell with p- value >0.05. In case of pus cell of vaginal smear the trial drug is reduced the pus cell but it

is not significantly effective to reduced the pus cell with p-value >0.05.

In case of urine examination mean ±SD also reduced. In case of pus cell of the trial drug is reduced the pus cell with p- value >0.05. where as in case of epithelial cell of urine examination the trial drug is not significantly effective to reduced the epithelial cell with p- value>0.05.

In case of HB% the mean± SD reduced ,the test of significance shows that the trial drug is not effective to on HB% .

Discussion-: All gynaecological disorder has been described in Ayurvedic classics under the heading of yoni vyapad,*Asrigdara* & *Guhyaroga*. Leucorrhoea(swetpradar) is a condition where *kapha-vata* are predominant & cervical erosion is main factor in leucorrhoea. Oral medication proved a negligible result. As regards the treatment of *swetapradar* described in Ayurveda, emphasis has been given to the use of local medication rather than oral preparation. *Uttarvasti, dhupan, dhabana, abachurnana* are some of the local vaginal application described for *swetapradara*.

The trial drug *khadira* powder was used locally in the form of *abachurnana* (vaginal dusting) or a period of 15 days after menstruation.After treatment of trial drug it were observed that the different sign & symptoms like cervical erosion,white discharge ,pain,burning,.Vaginal smear examination of pus cell & epithelial cell ,urine examination of pus cell & epithelial cell were reduced from increased value compare to placebo group.

Hence the trial drug is highly effective in cervical erosion with different sign & symptoms.

CONCLUSION: 1) The gynaecological problems become a challenge to treat on Ayurvedic line of treatment.There is a vast difference between ayurvedic & modern diagnostic technique in case of *Swetpradara*(Leucorrhoea due to cervical erosion).It becomes too difficult to diagnose by ancient methods as the Ayurvedic literature is almost silent about this condition.The modern science through continuous efforts failed to established a successful treatment for this burning problem of the women.

2)The present clinical study & keen observation reveals that local application(vaginal dusting) of *khadira churna* (powder of acacia catechu linn) gives substantial relief (80%) to the patient of vaginal discharge due to cervical erosion by correcting the erosion of cervix & there by reducing the leucorrhoea without having any adverse effect or toxicity on the body.

3)It can be concluded that the present study may focus a ray of light in the field of Ayurvedic research & set up milestone in the treatment of *Swetpradar*(leucorrhoea) due to cervical erosion.

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Corresponding Author:
Dr Deepak Kumar Goswami , Assistant Professor ,Prasuti Tantra &Stree RogaGovt. Ayurvedic College & Hospital, Guwahati, Assam
Email: Majhipramoda129@gmail.com

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