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## RESEARCH ARTICLE

## “EFFECT OF PATOLYADI KWATH & KAMPILLAKADI TAIL IN THE MANAGEMENT OF SADYO VRANA with special reference to TRAUMATIC WOUND”

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### Abstract

Sadyo-Vrana with a correlation to traumatic wound is frequently encountered into routine life and routine surgical practice. The patient demands the relief of pain and healing simultaneously. The incidence of traumatic wound has risen significantly, therefore, taken up in the present study with an objective to provide relief from pain and complete healing. Based on Ayurvedic principles, 30 patients suffering from traumatic wounds were selected. Complete history and clinical data were recorded in a specific designed Performa and divided into three Groups, viz. Group-A: sterile gauze dressing after cleaning with normal saline. Group-B: Treated with Patolyadi Kwath prakshalan and dressed with sterile dressing materials and Group-C: Treated with application of Kampillakadi Tail followed by Patolyadi Kwath prakshalan and dressed with sterile dressing materials. Duration of treatment in all three Groups was 7 days. After therapy statistical analysis concluded that Group- C showed better result in comparison to Group-A and Group-B.

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## INTRODUCTION

Vrana may be classified as *Nija & Agantuj*, where *Sadyovrana*<sup>1</sup> with a correlation to traumatic wound are of six types and free from *Tridosha* involvement which may be converted into *Dusta-vrana* if not treated properly. In *Sadyovrana*, pain, edema and fresh bleeding are main features. So basic principle of management runs through<sup>2</sup> – *Shothahara* and *Rakta stambhaka aushadhi prayoga* (that should have *Vedana shamaka guna, Shodhan* and *Ropana karma*) and *pathya -apathya prayoga*. *Kampillakadi tail* application after washing by *Patolyadi kwath* seems to possess above mentioned properties and hypothetical support. The results are encouraging. This study has opened a new avenue for further exploration in the field.

### AIMS & OBJECTIVES:

To evaluate the efficacy of *Patolyadi Kwath* and *Kampillakadi Tail* in the management of *Sadyo Vrana* (traumatic wound).

### MATERIALS & METHODS:

- Method of collection of data:** -The study was Randomized Controlled clinical Trial, in which 30 patients were selected by simple random sampling procedure. The selected patients were divided into three Groups, 10 in each. Initially all wounds were cleaned by normal saline.

**Group – A (Control Group):** In this Group patients were treated with sterile dressing with normal saline and sterile dress materials once daily for 7 days.

**Group – B** – In this Group wound have been washed with *PATOLYADI KWATH*.

**Group – C** – In this Group the patients have been treated with *PATOLYADI KWATH & KAMPILLAKADI TAIL*.

**Duration of treatment– Once daily for 7 days.**

2. **Follow up period –7 days** (changes were assessed on 3<sup>rd</sup> day, 5<sup>th</sup> day, 7<sup>th</sup> day), where Initial sign & symptoms were taken as 1<sup>st</sup> day (i.e. B.T.).

3. **INCLUSION CRITERIA –**

- i. Patients having traumatic wounds up to 6x8 cm. size of any site.
- ii. Acute traumatic wound (upto 4 weeks).
- iii. Patients of 20-50 year age Group of any sex.

4. **EXCLUSION CRITERIA –**

- i. Infected wounds.
- ii. Punctured, stabbed & surgical wounds.
- iii. Wound with systemic involvement and morbid changes.
- iv. Wound with visceral, bony & spinal injury.

5. **Investigation:** Complete blood count., Blood sugar, Urine examination.

6. **Selection of Drugs:** Selected drugs for study *Kampillakadi Tail*<sup>3</sup> are mentioned in *Charak Samhita* in the reference of *Vrana Chikitsa* and *Patolyadi Kwath*<sup>4</sup> is mentioned in *Chakra Datt Samihata*.

7. **Preparation of Drugs:**

Both the drugs have been prepared in the GMP Certified pharmacy of N.I.A. ,Jaipur, under close supervision of the experts.

8. **Parameter of assessment:-**

The patients were assessed on the basis of subjective and objective parameters before and after treatment:

**A. Colour:-**

- Grade – 0 – healed wound/equivalent to skin colour.
- Grade – 1 - healing wound/equivalent to brownish-white.
- Grade – 2 –Cleaned wound/equivalent to reddish-white.
- Grade – 3–Contaminated with dust or soiled wound/equivalent to congested Reddish-black.

**B. Discharge:-**

- Grade – 0 - No discharge
- Grade – 1 - If wound wets 1 pad of 4x4 cm gauze piece (mild) per day.
- Grade – 2 - If wound wets 2 pads of 4x4 cm gauze piece (moderate) per day.
- Grade – 3 - If wound wets more than 2 pads of 4x 4 cm gauze piece (Profuse) per day .

**C. Pain on VAS-** As the patient himself/herself expressed the pain in his/her own terms, so this was Graded, starting from mild to severe as par with the VAS.

- G<sub>0</sub> – 0 -Absence of pain/no pain.
- G<sub>1</sub> – 1 to 3 mark on scale - Mild – Pain that can easily be ignored.
- G<sub>2</sub> – 4 to 6 mark on scale - Moderate – pain that cannot be ignored, interferes with function, and needs treatment from time to time.
- G<sub>3</sub> – 7 to 10 marks on scale - Severe – That is present most of the time demanding constant attention.

**D. Swelling of the surrounding area:**

- G<sub>0</sub> – Absent
- G<sub>1</sub> - Slight swelling around the wound margin without induration.
- G<sub>2</sub> - Swelling around wound margin with little area of induration.
- G<sub>3</sub> - Swelling with marked induration.

**E. Size of wound:** The size was directly recorded with sterile blotting paper was placed over the wound.

- Grade - 0 – 0 to 1 cm<sup>2</sup>
- Grade – 1 - Within 1.1- 4 cm<sup>2</sup>
- Grade – 2 - Within 4.1-9 cm<sup>2</sup>
- Grade – 3 -Within 9.1-16 cm<sup>2</sup> or more

**F. Unit healing time (cm<sup>2</sup> / day) =** Initial surface area of wound – surface area of wound after 7 days of treatment / duration of study (7 days) = surface area healed in sq cm / no of days.

**OBSERVATION AND RESULTS:****TABLE No.1: EFFECT OF GROUP-A, GROUP-B AND GROUP-C ON INTENSITY OF PAIN:-**

	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	N	S.D.	S.E.	P	S
Group A	7.00	5.10	1.90	27.14%	10	3.03	0.96	0.08	I.S.
Group B	6.90	4.60	2.30	33.33%	10	2.16	0.68	0.019	S.
Group C	7.40	0.80	6.60	89.19%	10	1.71	0.54	0.002	H.S.

**TABLE No.2: EFFECT OF GROUP-A, GROUP-B AND GROUP-C ON SWELLING:-**

	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	N	S.D.	S.E.	P	S
Group A	1.60	1.00	0.60	37.50%	10	0.52	0.16	0.03	S.
Group B	1.70	0.80	0.90	52.94%	10	0.74	0.23	0.015	S.
Group C	1.60	0.40	1.20	75.00%	10	0.42	0.13	0.002	H.S.

**TABLE NO.3: EFFECT OF GROUP-A, GROUP-B AND GROUP-C ON COLOUR:-**

	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	N	S.D.	S.E.	P	S
Group A	2.90	2.30	0.60	20.69%	10	0.97	0.31	0.09	I.S.
Group B	2.90	2.50	0.40	13.79%	10	0.70	0.22	0.15	I.S.
Group C	2.90	1.80	1.10	37.93%	10	1.10	0.35	0.019	S.

**TABLE NO.4: EFFECT OF GROUP-A, GROUP-B AND GROUP-C ON DISCHARGE:-**

	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	N	S.D.	S.E.	P	S
Group A	2.50	1.40	1.10	44.00%	10	0.99	0.31	0.015	S.
Group B	2.80	1.90	0.90	32.14%	10	0.74	0.23	0.015	S
Group C	2.60	1.30	1.30	50.00%	10	1.06	0.33	0.01	S.

**TABLE NO.5: EFFECT OF GROUP-A, GROUP-B AND GROUP-C ON SIZE OF WOUND (M):-**

	Mean B.T.	Mean A.T.	Mean Dif.	Mean %	N	S.D.	S.E.	P	S
Group A	7.55	7.11	0.44	5.83%	10	0.73	0.23	0.1	I.S.
Group B	7.12	6.06	1.06	14.89%	10	1.41	0.45	0.013	S.
Group C	6.88	2.11	4.77	69.33%	10	1.31	0.41	0.002	H.S.

**TABLE NO.6:- SHOWING SYMPTOMS WISE IMPROVEMENT AFTER EACH FOLLOW-UP IN ALL GROUPS:**

	Group A			Group B			Group C		
	3rd day	5th day	7th day	3rd day	5th day	7th day	3rd day	5th day	7th day
<b>Pain</b>	14.29%	18.57%	27.14%	15.94%	28.99%	33.33%	17.57%	58.11%	89.19%
<b>Swelling</b>	12.50%	25.00%	37.50%	17.65%	47.06%	52.94%	12.50%	37.50%	75.00%
<b>Colour</b>	6.90%	17.24%	20.69%	3.45%	10.34%	13.79%	10.34%	27.59%	37.93%
<b>Discharge</b>	4.00%	20.00%	44.00%	3.57%	14.29%	32.14%	11.54%	19.23%	50.00%
<b>Size of wound</b>	1.72%	4.24%	5.83%	3.09%	8.01%	14.89%	10.90%	24.27%	69.33%

**TABLE NO.7:INTER-GROUP COMPARISON BETWEEN Gr-A AND Gr-B FOR EFFECTIVENESS ON SIGN & SYMPTOMS: (Mann-Whitney Test)**

Parameters	U- value	P- value	Result
<b>Pain</b>	37.00	0.32	I.S.
<b>Swelling</b>	27.50	0.05	S

<b>Colour</b>	47.00	0.8	I.S.
<b>Discharge</b>	45.00	0.7	I.S.
<b>Size of Wound (M)</b>	9.50	0.002	H.S.
<b>Unit Healing Time 3<sup>rd</sup></b>	9.50	0.002	H.S.

(HS: Highly Significant      S.: Significant      I.S.: In Significant)

**TABLE NO.8: INTER-GROUP COMPARISON BETWEEN Gr-A AND Gr-C FOR EFFECTIVENESS ON SIGN & SYMPTOMS: (Mann-Whitney Test)**

Parameters	U- value	P- value	Result
<b>Pain</b>	18.50	0.01	S
<b>Swelling</b>	20.00	0.008	H.S.
<b>Colour</b>	19.50	0.01	S
<b>Discharge</b>	24.50	0.04	S
<b>Size of Wound (M)</b>	0.00	0.002	H.S.
<b>Unit Healing Time</b>	0.00	0.0002	H.S.

(HS: Highly Significant      S.: Significant      I.S.: In Significant)

**Table No.9:- SHOWING IMPROVEMENT AFTER EACH FOLLOW UP IN ALL GROUPS:**

Effect of therapy	No. of Patients								
	Group A			Group B			Group C		
	3rd day	5th day	7th day	3rd day	5th day	7th day	3rd day	5th day	7th day
Unimproved (0-25%)	10 (100%)	5 (50%)	1 (10%)	9 (90%)	5 (50%)	0	6 (60%)	0	0
Partial improved	0	5	4	1	4	4	4	4	0

(25%-50%)		(50%)	(40%)	(10%)	(40%)	(40%)	(40%)	(40%)	
Moderate improved (50%-75%)	0	0	5 (50%)	0	1 (10%)	4 (40%)	0	6 (60%)	4 (40%)
Marked improved (above 75%)	0	0	0	0	0	2 (20%)	0	0	6 (60%)

## DISCUSSION:

**Effect on Group- A (Sterile Dressing):** On the 7th day 27.14% relief in pain, 37.25% relief in swelling, 20.69% improvement in colour 44% relief in discharge and 5.83% improvement in size of wound was observed. On statistical analysis the overall effect of Group- A was Significant on swelling and discharge and In-significant on Intensity of pain, colour and size of wound.

**Effect on Group- B (Patolyadi Kwath):** On the 7th day 33.33% relief in pain, 52.94% relief in swelling, 13.79% improvement in colour, 32.14% relief in discharge and 14.89% improvement in size of wound were observed. On statistical analysis the overall effect of Group- B was significantly effective on Intensity of pain, on swelling, on discharge and on size of wound. Group-B was In-significant on discharge.

**Effect on Group- C (Patolyadi Kwath + Kampillakadi Tail):** On the 7th day 89.19% relief in pain, 75% relief in swelling, 37.93% improvement in colour, 50% relief in discharge and 69.33% improvement in size of wound was observed. On statistical analysis the overall effect of Group- C was highly-significant on Intensity of pain, on swelling and size of wound. Group-C was significantly effective on colour and discharge.

## COMPARATIVE ANALYSIS OF GROUPS ON SUBJECTIVE AND OBJECTIVE PARAMETERS:

### \*\* Inter Group Comparison between Group-A and Group-B:

\* Out of this study the statistical analysis as a whole signifies that the trial Group-B (*Patolyadi Kwath*) is showing **significant** effect in reducing **swelling** on 7th day over control Group-A with p-value 0.0469 and in improving **Granulation tissue** with p-value 0.0234.

\* Group-B also showed **very-significant** effects over Group- A on 7th day in reducing **size of wound and unit healing time** with p-values 0.002 res.

\* Regarding the **Pain, Colour and Discharge** Group-B and Group-A showed **In-significant** effects.

### \*\* Inter Group Comparison between Group-A and Group-C:

\* On Inter-Group comparison between Group-A and Group-C, stastical analysis signifies that Trial Group- C (*Patolyadi Kwath + Kampillakadi Tail*) showed **significant** effect over Control Group-A in 7th day-up in reducing **pain** with p-value 0.01, in improving **colour** with p-value 0.01 and in reducing **discharge** with p-value 0.049.

\* Regarding **swelling, Granulation tissue, size of wound and unit healing time** Trial Group-C showed **Very-significant** and **highly-significant** effect over Control Group-A on 7th day-up with p-value 0.008, 0.005, 0.0002, 0.0002 res.

### Probable Mode of action of Drugs:

Both the drugs possess *Tikta, Kashaya* as predominant *rasa*, as well as *Laghu* and *Ruksha Guna* and *Sheeta Virya* and *Katu Vipaka* followed by some *Madhur vipaka* also. So as such the Gross action of *Kampillakadi Tail* on the *Dosha* should be definitely *Tridosha shamaka*, mainly *Pitta* and *vata dosha shamaka* as *Vrana* is *Pitta* (causes burning sensation) and *Vata dosha* (causes pain) *pradhanaya vyadhi*. The contents of *Patolyadi Kwath* and *Kampillakadi Tail* do *Vrana-Shodhana, Vrana-Ropana, Rakata-Stambhana, Vedana-Sthapana, Shothahara* and *Daha-Shamaka karma*. Due to *Laghu Guna*<sup>5</sup>, *Tail* absorbed in *Vrana* deeply and due to *Ruksha Guna* it does *Shodhana* of *Vrana*.

- As well *Til Tail* has Vitamin-A, which increases the inflammatory responses, stimulates collagen synthesis and epithelialisation<sup>6</sup> by topical application. It also acts as anti-keratinizing property. Vitamin-A can reverse the inhibitory effect of corticosteroids on wound healing, thus, acting as anti-inflammatory<sup>7</sup>.

**CONCLUSION:** Overall assessment shows that application of *Kampillakadi Tail* followed by *Patolyadi Kwath prakshalan* accelerate healing process of *Vrana* (*Agantuja* type) by giving relief in all cardinal sign & symptoms than only *Patolyadi Kwath prakshalan* (Group-B) and **only sterile dressing** (Group-A).

- \* Since the clinical study was conducted on a limited number of patients, it may not be claimed as final, so detailed study should be done on a large sample size.

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