

# **A COMPARATIVE STUDY OF PAATHA SIDDHA TIL TAILA AND JATYADI TAILA IN THE MANAGEMENT OF DUSTA VRANA (INFECTED WOUND)**

## **OBSERVATIONS AND RESULTS**

### **OBSERVATIONS**

On the basis of clinical study, occurrences of various incidents are presented in the form of chart, tables and graphs. The following observation is important in the aspect.

#### **A) General Observation:**

- Distribution of patients according to age.
- Distribution of patients according to sex.
- Distribution of patients according to occupation.
- Distribution of patients according to religion.
- Distribution of patients according to addiction.
- Distribution of patients according to prakruti.
- Distribution of patients according to Agni
- Distribution of patients according to dietary habits
- Distribution of patients according to extremity involved(wound site)

#### **B) Observational Evolution Of Result:**

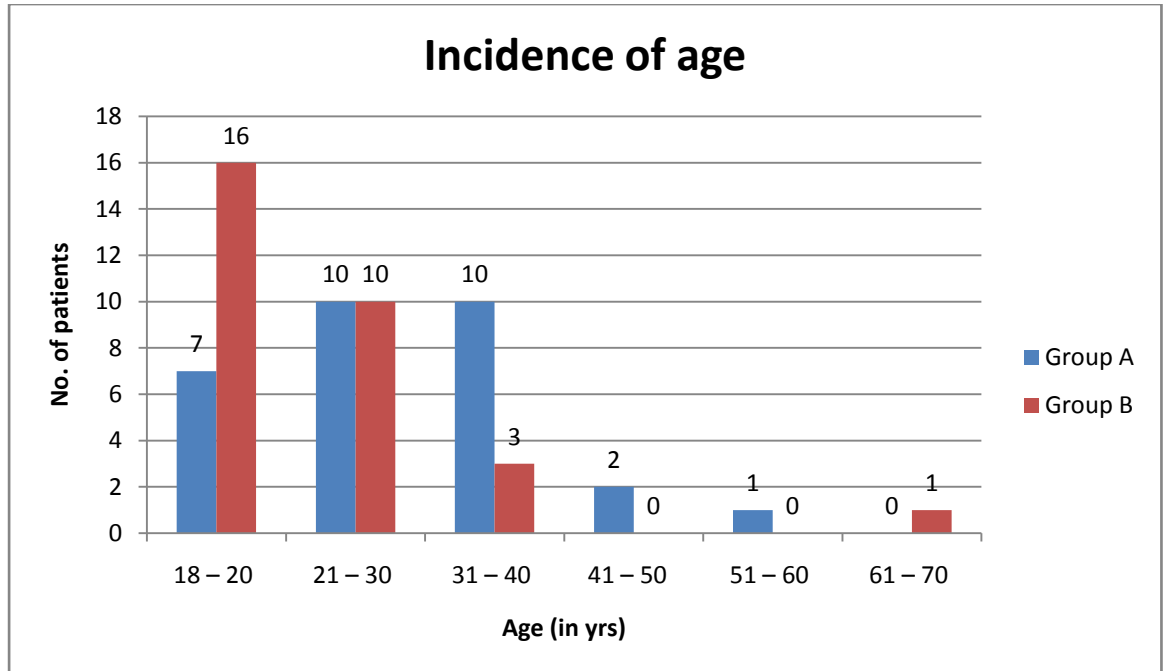
- 1) upshayanupshaya according to Pain(Vedana).
- 2) upshayanupshaya according to Discharge(Vranasrava).
- 3) upshayanupshaya according to Granulation.
- 4) upshayanupshaya according to Margins and surface (Vranaoushta)
- 5) upshayanupshaya according to Size(Vranakar)
- 6) upshayanupshaya according to Tenderness(Sparshasahatwa).

## 1. Incidence of Age:

**Table No.39 Distribution of patient according to age**

Sr. No.	Age Group	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	18 – 20	07	23.33%	16	53.33%	23	38.33%
2.	21 – 30	10	33.33%	10	33.33%	20	33.33%
3.	31 – 40	10	33.33%	03	10.00%	13	21.67%
4.	41 – 50	02	06.67%	00	00.00%	02	03.33%
5.	51 – 60	01	03.33%	00	00.00%	01	01.67%
6.	61 – 70	00	00.00%	01	03.33%	01	01.67%
<b>Total</b>		<b>30</b>	<b>100%</b>	<b>30</b>	<b>100%</b>	<b>60</b>	<b>100%</b>

**Graph No.1**

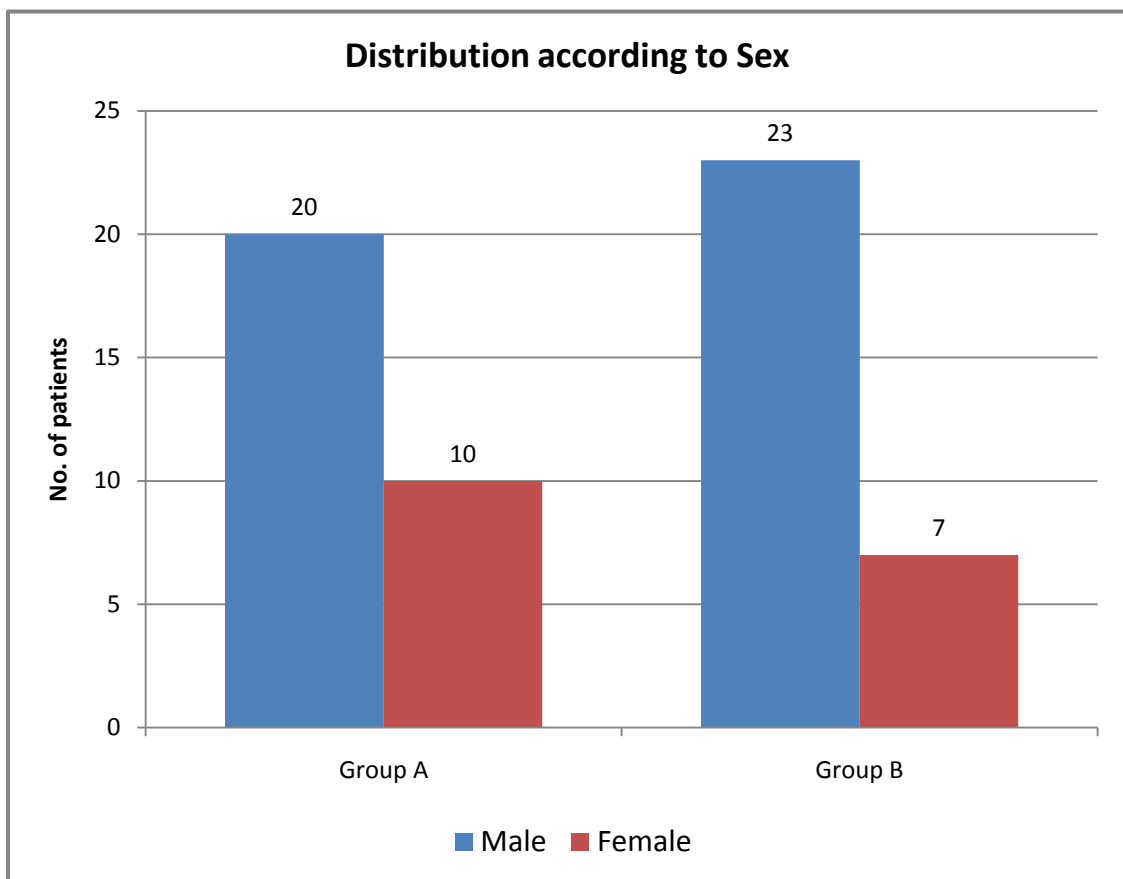


## 2.Incidence of Sex

**Table No. 40 Distribution of patient according to sex**

Sr. No.	Sex	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	Male	20	66.67%	23	76.67%	43	71.67%
2.	Female	10	33.33%	07	23.33%	17	28.33%

**Graph No.2**

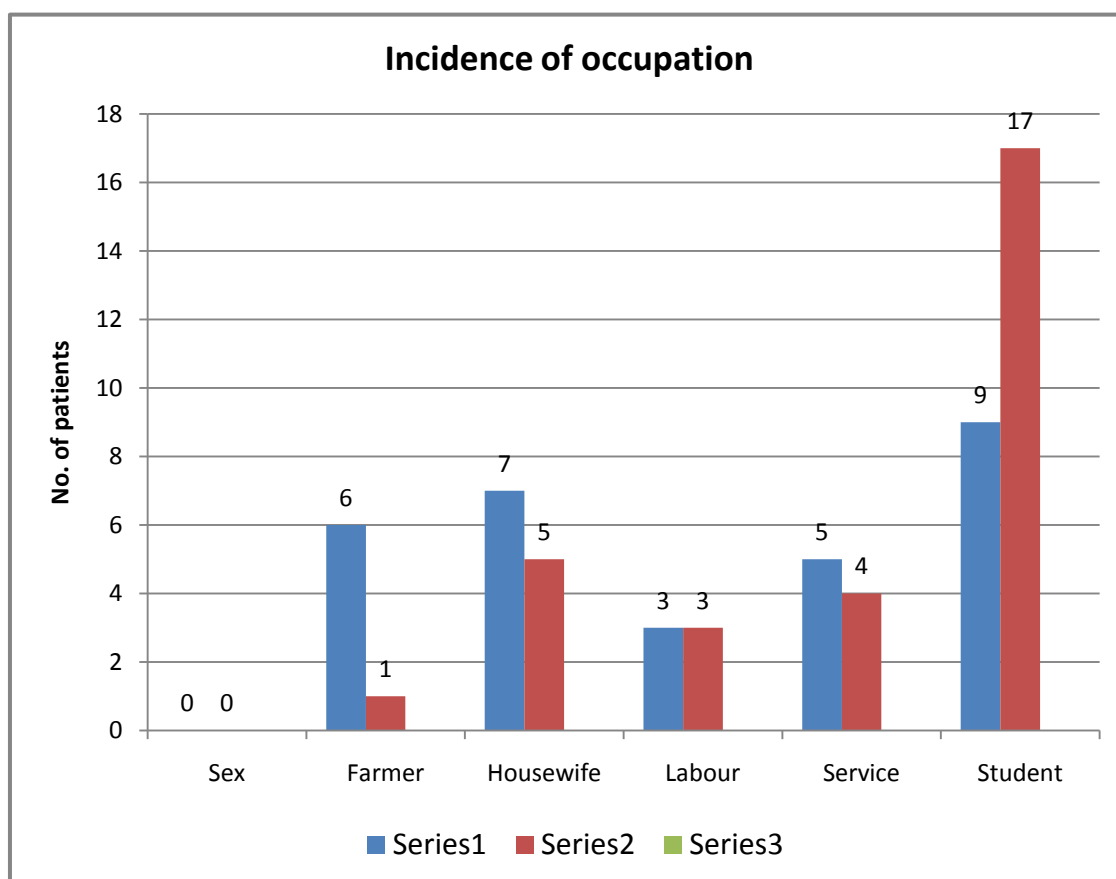


### 3.Incidence of Occupation

**Table No.41 Distribution of patient according to occupation**

Sr. No.	Occupation	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	Farmer	06	20.00%	01	03.33%	07	11.67%
2.	Housewife	07	23.33%	05	16.67%	12	20.00%
3.	Labour	03	10.00%	03	10.00%	06	10.00%
4.	Service	05	16.67%	04	13.33%	09	15.00%
5.	Student	09	30.00%	17	56.33%	26	43.33%

**Graph No.3**

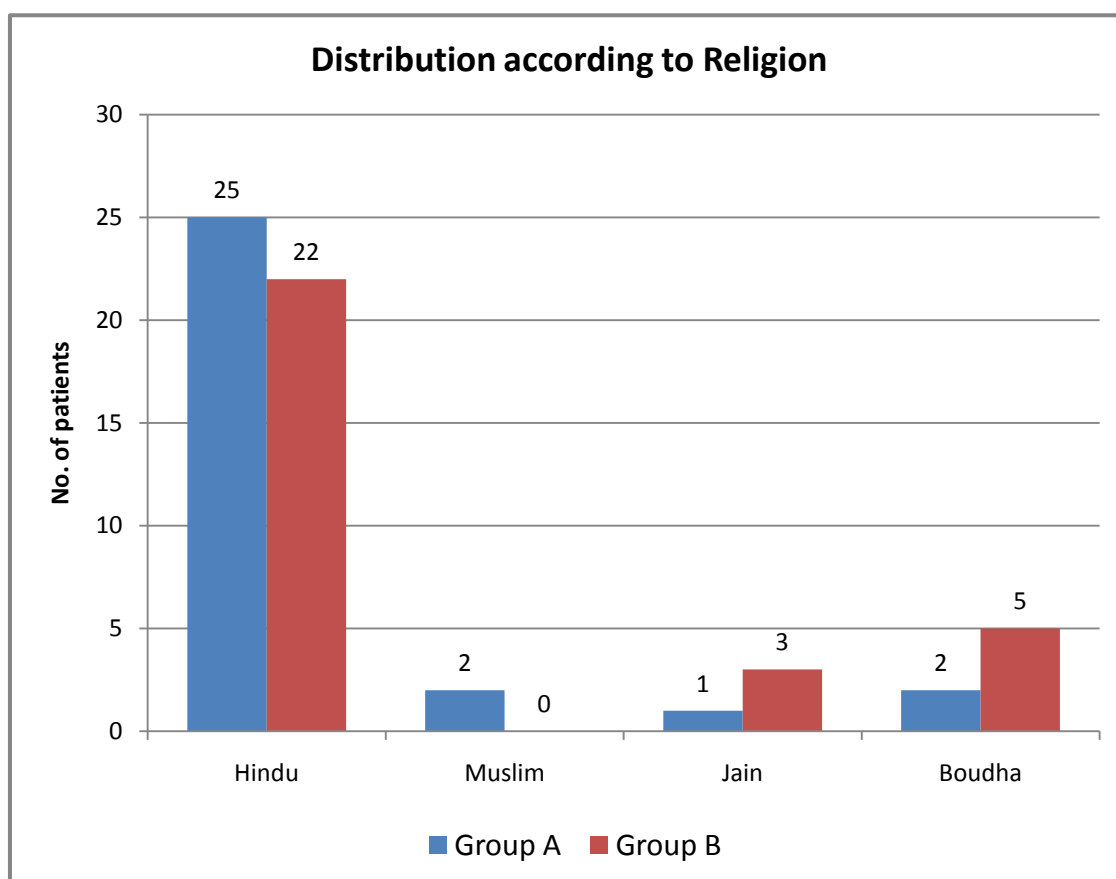


#### 4.Incidence of Religion

**Table No.42 Distribution of patient according to religion**

Sr. No.	Religion	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	Hindu	25	83.33%	22	73.33%	47	71.67%
2.	Muslim	02	06.67%	00	00.00%	02	03.33%
3.	Jain	01	03.33%	03	10.00%	04	06.67%
4.	Boudha	02	06.67%	05	16.67%	07	11.67%

**Graoh No.4**

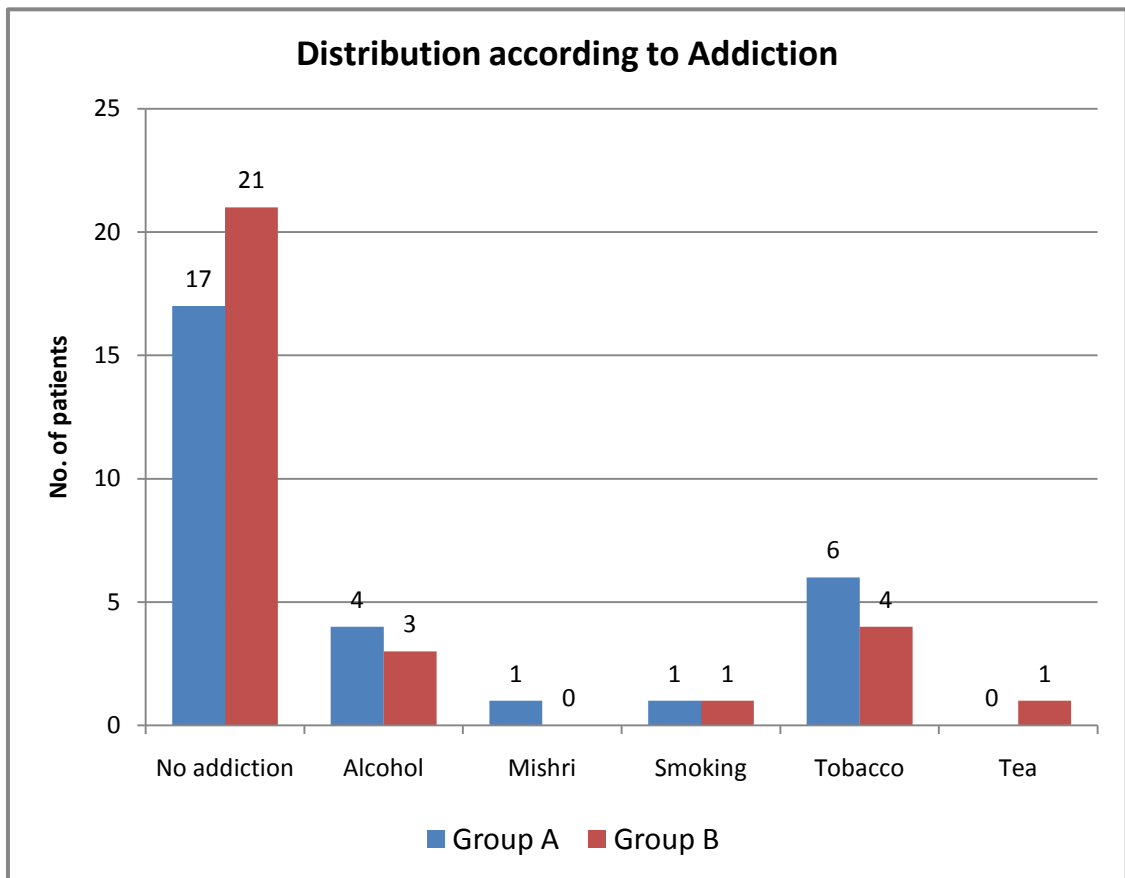


## 5.Incidence of Addiction

**Table No.43 Distribution of patient according to addiction**

Sr. No.	Addiction	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	No addiction	17	56.67%	21	70.00%	38	63.33%
2.	Alcohol	04	13.33%	03	10.00%	07	11.67%
3.	Mishri	01	03.33%	00	00.00%	01	01.67%
4.	Smoking	01	03.33%	01	03.33%	02	03.33%
5.	Tobacco	06	20.00%	04	13.33%	10	16.67%
6.	Tea	00	00.00%	01	03.33%	01	01.67%
7.	Other	01	03.33%	00	00.00%	01	01.67%

**Graph No.5**

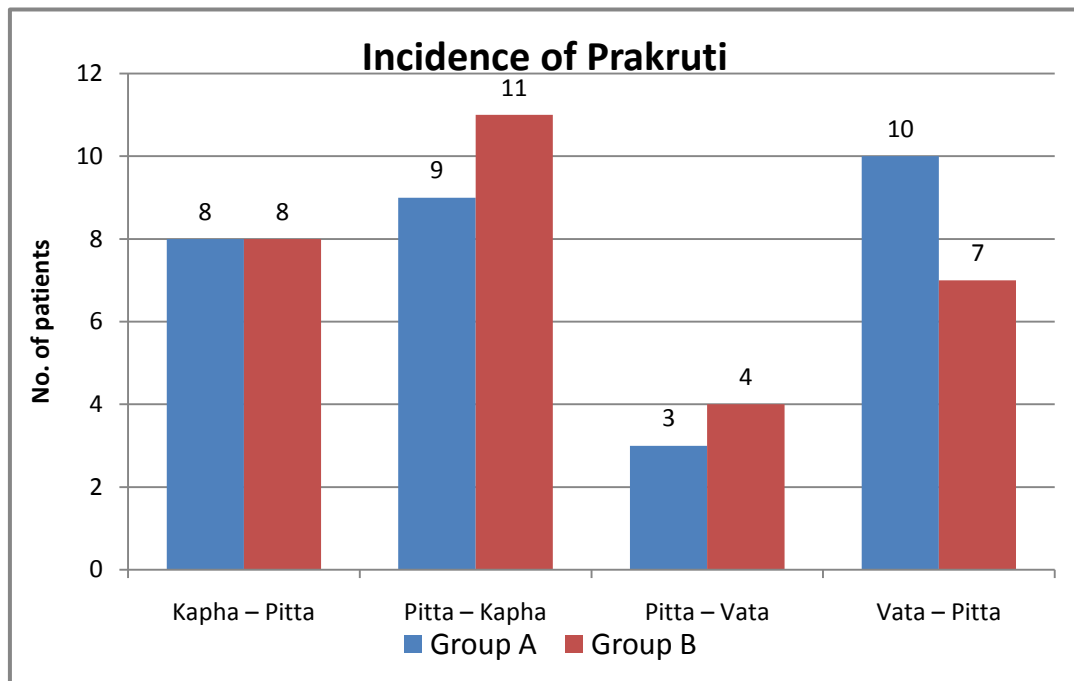


## 6.Incidence of Prakruti

**Table No.44 Distribution of patient according to prakruti**

Sr. No.	Prakruti	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	Kapha – Pitta	08	26.67%	08	26.67%	16	26.67%
2.	Pitta – Kapha	09	30.00%	11	36.67%	20	33.33%
3.	Pitta – Vata	03	10.00%	04	13.33%	07	11.67%
4.	Vata – Pitta	10	33.33%	07	23.33%	17	28.33%

**Graph No.6**

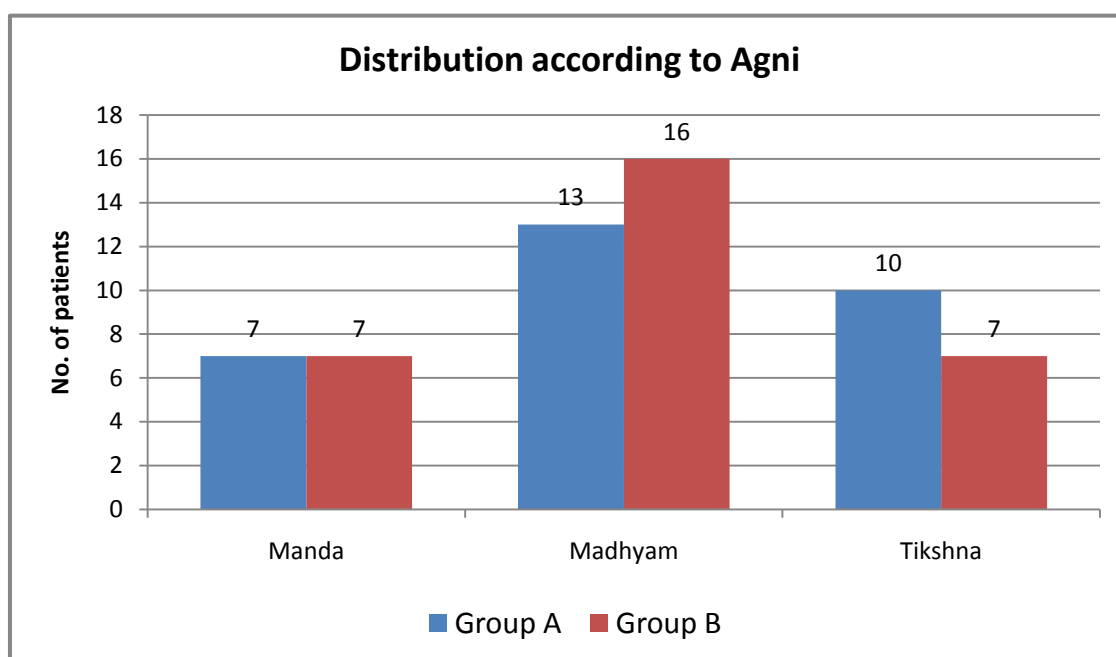


## 7.Incidence of Agni

**Table No.45 Distribution of patient according to agni**

Sr. No.	Agni	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	Manda	07	23.33%	07	23.33%	14	23.33%
2.	Madhyam	13	43.33%	16	53.33%	29	48.33%
3.	Tikshna	10	33.33%	07	23.33%	17	28.33%

**Graph No.7**



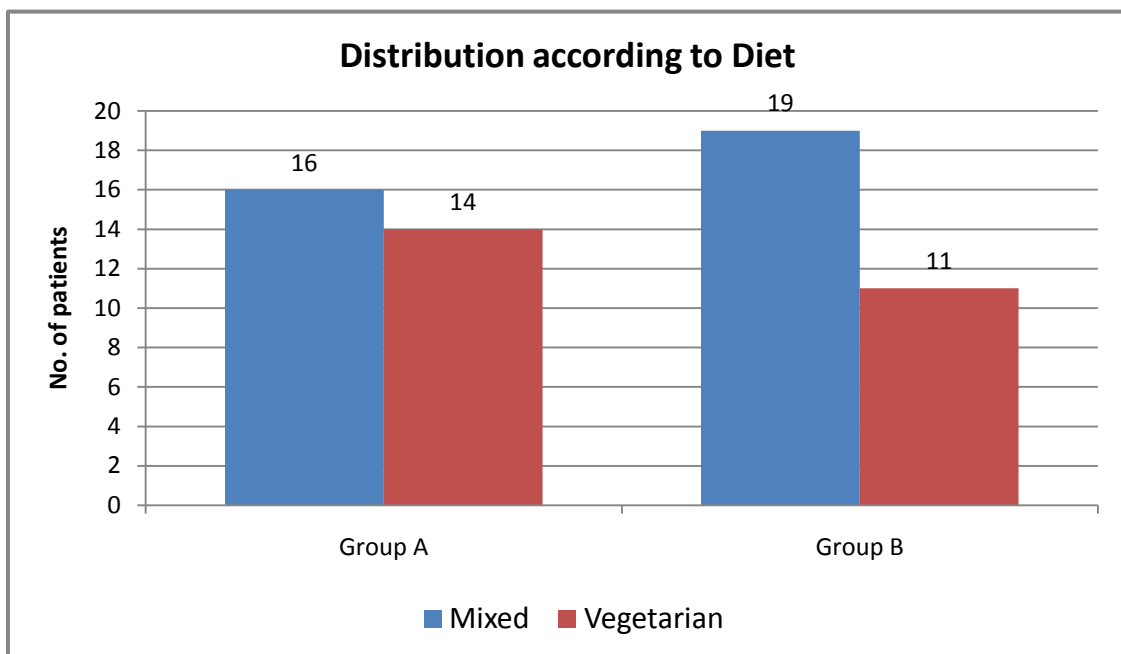


## 8.Incidence of Dietary habit

**Table No.46 Distribution of patient according to dietary habit**

Sr. No.	Dietary habit	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	Mixed	16	53.33%	19	63.33%	35	58.33%
2.	Vegetarian	14	46.67%	11	36.67%	25	41.67%

**Graph No.8**

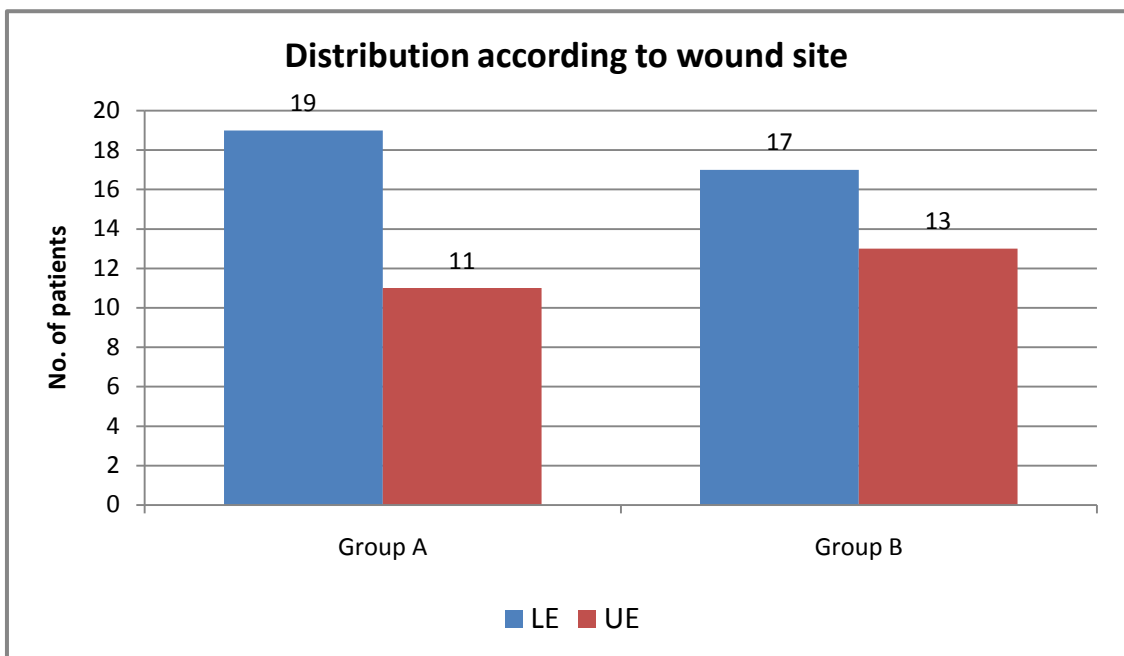


## 9.Incidence of Wound site

**Table No.47 Distribution of patient according to wound site**

Sr. No.	Wound site	Group A		Group B		Total	
		Count	%	Count	%	Count	%
1.	LE	19	63.33%	17	56.67%	36	60.00%
2.	UE	11	36.67%	13	43.33%	24	40.00%

**Graph No.9**



### **Statistical analysis of different parameters:-**

As grading used for some of the parameters were ordinal in nature, "Wilcoxon Signed Rank test" is used for intra-group comparison. (i.e. before and after treatment of a group) while for inter-group comparison, (i.e. for comparing two groups with each other) "Mann-Whitney U test" is used.

We have tested hypothesis for each parameter and result is interpreted accordingly. The level of significance is kept at 0.05. Proper summary statistics like mean, median, S.D., IQR (Inter Quartile Range) are provided along with graphical and diagrams.

## 1.Pain(Vedana):

**Table No.48 Statistical analysis Of vedna in the studty**

Vedana	Median score			IQR of diff. (Q <sub>3</sub> - Q <sub>1</sub> )	Sample size	Wilcoxon signed rank test (T+)	P - Value
	Bef	Aft	Median diff.				
<b>Group A</b>	4	1	2	1 (3 - 2)	30	378	< 0.001
<b>Group B</b>	4	1	2.5	1 (3 - 2)	30	465	< 0.001

Using one tailed Wilcoxon signed rank test, to test the hypothesis –

H<sub>0</sub> : Median reduction in Vedana score before and after treatment is zero.

H<sub>1</sub> : Median reduction in Vedana score before and after treatment is greater than zero.

For group A, the median reduction in vedana score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in Vedana for Group A.** For group B, the median reduction in vedana score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in vedana for Group B.**

### **Comparative Analysis of Groups:**

Using Mann-Whitney U test, to test the hypothesis –

H<sub>0</sub> : Reduction in vedana score for group A and group B are equal (equally distributed)

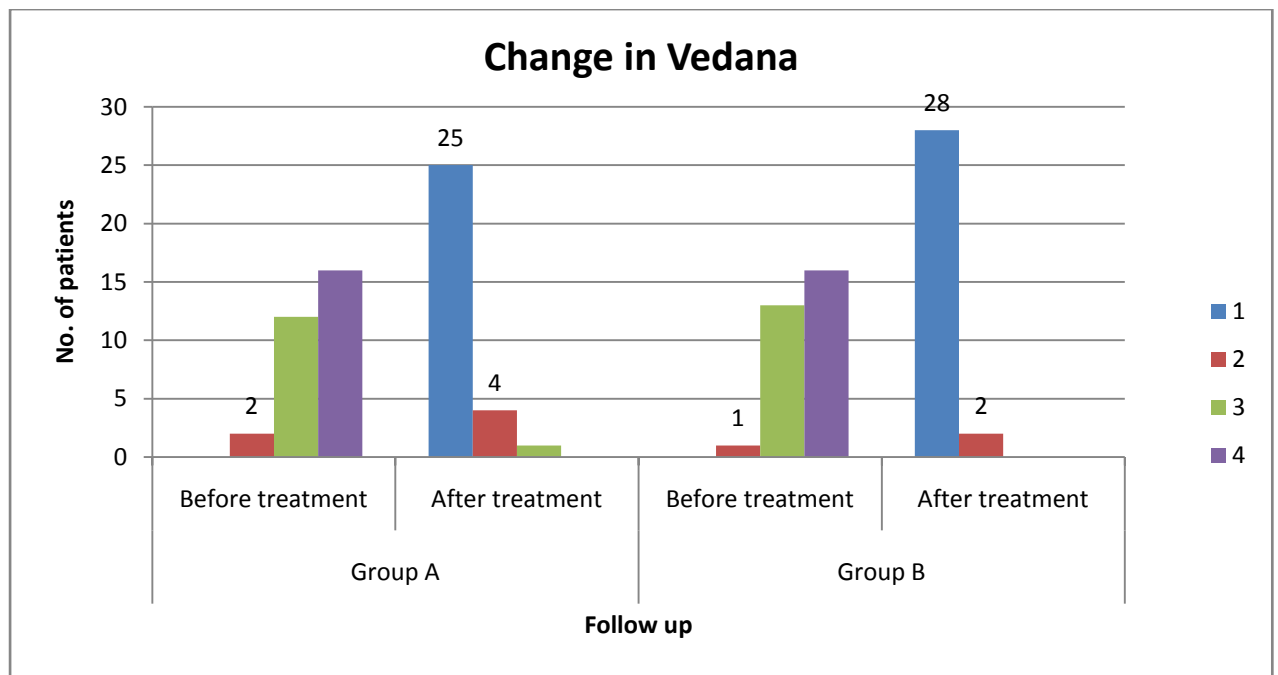
H<sub>1</sub> : Reduction in vedana score for group A and group B are not equal(not equally distributed)

**Table No. 49 Statistical analysis Of vedna in the study**

Group	Median difference  bef-aft	Mean of difference  bef - aft	S.D. of difference  bef - aft	Mann-Whitney U statistic	P- Value
Group A	2.0	2.27	0.907	425.5	0.693
Group B	2.5	2.43	0.626		

Distribution of "reduction in vedana score" for group A and group B is not significantly different. (p -value = 0.693) Thus **both drug A and drug B can be considered as equally effective in reduction of vedana.**

**Graph No.10**



**Table No. 50 Statistical analysis Of vedna in the study**

Vedana	1		2		3		4	
	count	%	count	%	count	%	count	%
Group A	0	0.00%	2	6.67%	12	40.00%	16	53.33%
Group B	25	83.33%	4	13.33%	1	3.33%	0	0.00%

## 2. Discharge (Vranasrav)

**Table No. 51 Statistical analysis Of vranasrav in the study**

Vranasrava	Median score			IQR of diff. (Q <sub>3</sub> - Q <sub>1</sub> )	Sample size	Wilcoxon signed rank test (T <sup>+</sup> )	P - Value
	Before	Aft	Median diff.				
Group A	3	1	2	1 (2 - 1)	30	406	< 0.001
Group B	3	1	2	1 (3 - 2)	30	351	< 0.001

Using one tailed Wilcoxon signed rank test, to test the hypothesis -

H<sub>0</sub> : Median reduction in Vranasrav score before and after treatment is zero.

H<sub>1</sub> : Median reduction in Vranasrav score before and after treatment is greater than zero.

For group A, the median reduction in vranasrav score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in Vranasrav for Group A.**

For group B, the median reduction in vranasrav score after treatment is

significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in vranasrav for Group B.**

### **Comparative Analysis of Groups:**

Using Mann-Whitney U test, to test the hypothesis –

$H_0$  : Reduction in vranasrav score for group A and group B are equal (equally distributed)

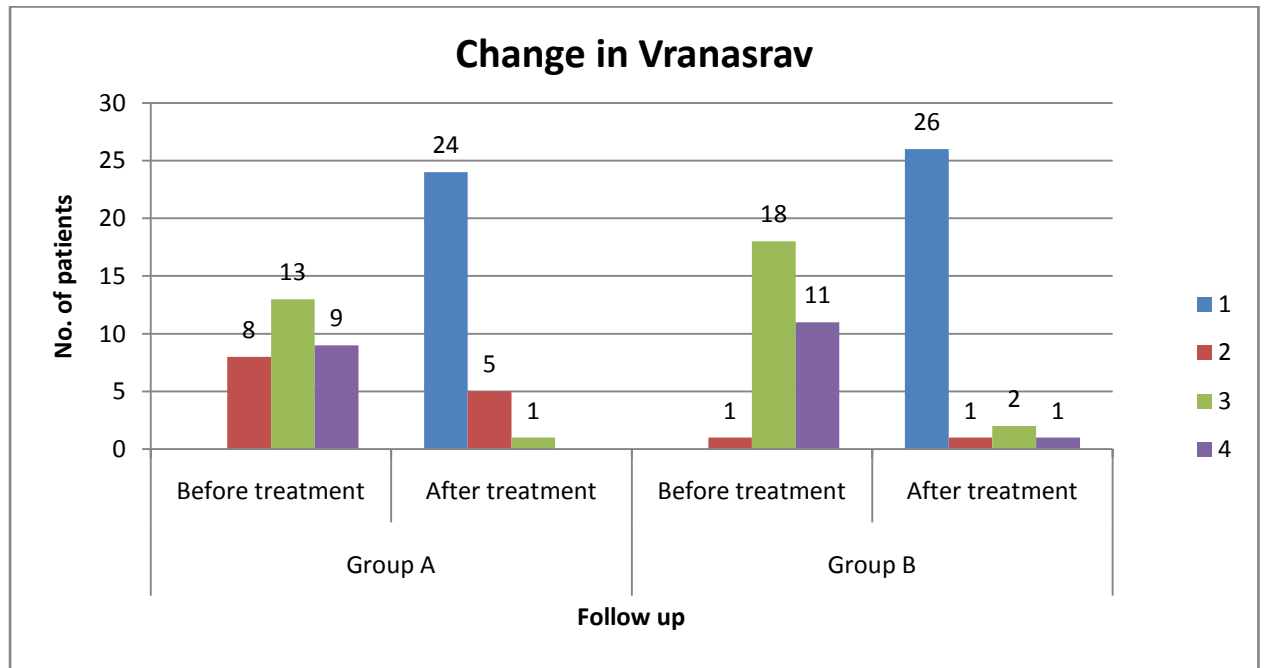
$H_1$  : Reduction in vranasrav score for group A and group B are not equal(not equally distributed)

**Table No. 52 Statistical analysis Of vranasrav in the study**

<b>Group</b>	<b>Median difference  bef-aft </b>	<b>Mean of difference  bef - aft </b>	<b>S.D. of difference  bef - aft </b>	<b>Mann-Whitney U statistic</b>	<b>P- Value</b>
<b>Group A</b>	2	1.80	0.887	359	0.152
<b>Group B</b>	2	2.07	0.944		

Distribution of “reduction in vranasrav score” for group A and group B is not significantly different. (p -value = 0.152) Thus **both drug A and drug B can be considered as equally effective in reduction of Vranasrav.**

**Graph No.11**



**Table No.53 Statistical analysis Of vranasrav in the study**

Vranasrav	1		2		3		4	
	count	%	count	%	count	%	count	%
Group A	0	0.00%	8	26.67%	13	43.33%	9	30.00%
Group B	24	80.00%	5	16.67%	1	3.33%	0	0.00%

### 3. Granulation

**Table No.54 Statistical analysis Of granulation in the study**

Granulation	Median score			IQR of diff. (Q <sub>3</sub> - Q <sub>1</sub> )	Sample size	Wilcoxon signed rank test (T+)	P - Value
	Bef	Aft	Median diff.				
<b>Group A</b>	3	1	2	0 (2 - 2)	30	465	< 0.001
<b>Group B</b>	3	1	2	0 (2 - 2)	30	465	< 0.001

Using one tailed Wilcoxon signed rank test, to test the hypothesis –

H<sub>0</sub> : Median reduction in Granulation score before and after treatment is zero.

H<sub>1</sub> : Median reduction in Granulation score before and after treatment is greater than zero.

For group A, the median reduction in granulation score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in Granulation for Group A.**

For group B, the median reduction in granulation score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in granulation for Group B.**

#### **Comparative Analysis of Groups:**

Using Mann-Whitney U test, to test the hypothesis –

H<sub>0</sub> : Reduction in granulation score for group A and group B are equal (equally distributed)

H<sub>1</sub> : Reduction in granulation score for group A and group B are not equal(not equally distributed)

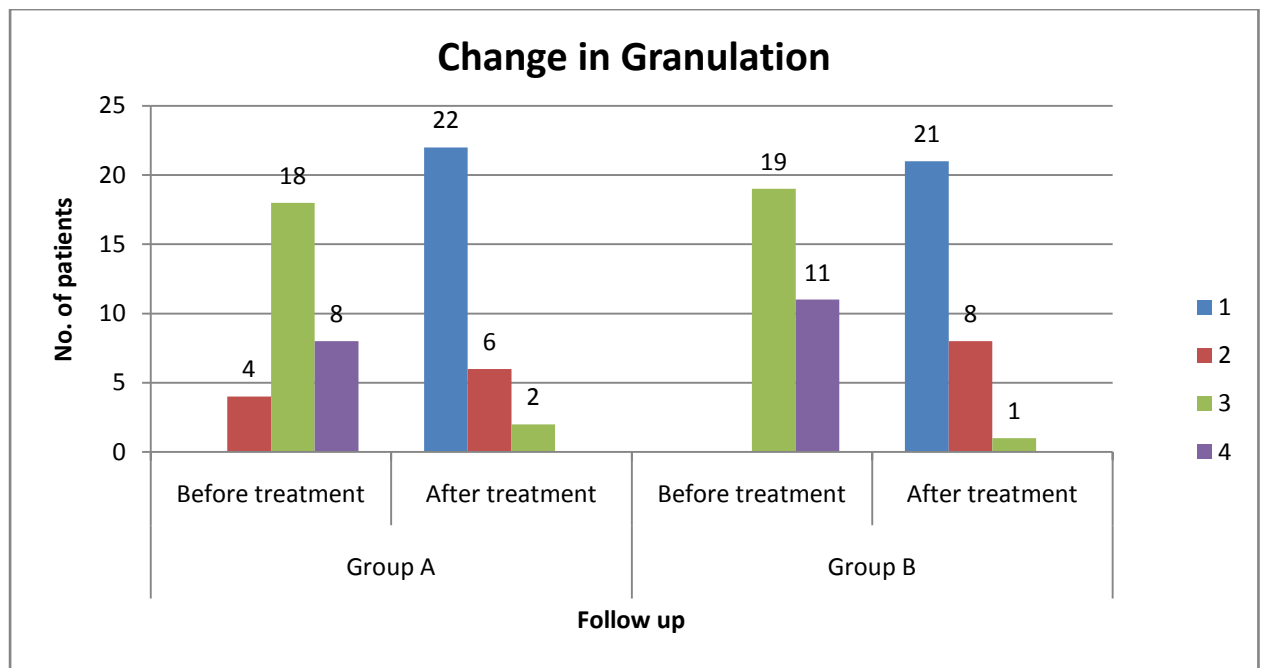


**Table No.55 Statistical analysis Of granulation in the study**

Group	Median difference  bef-aft	Mean of difference  bef - aft	S.D. of difference  bef - aft	Mann-Whitney U statistic	P- Value
Group A	2	1.80	0.484	354.5	0.051
Group B	2	2.03	0.414		

Distribution of “reduction in granulation score” for group A and group B is not significantly different. (p -value = 0.051) Thus **both drug A and drug B can be considered as equally effective in reduction of Granulation.**

**Graph No.12**



**Table No.56\_Statistical analysis Of granulation in the study**

Granulation	1		2		3		4	
	count	%	count	%	count	%	count	%
Group A	0	0.00%	4	13.33%	18	60.00%	8	26.67%
Group B	22	73.33%	6	20.00%	2	6.67%	0	0.00%

#### 4.Margin and surface(Vranaoushta)

**Table No.57 Statistical analysis Of vranaoushta in the study**

Margin and surface	Median score			IQR of diff. (Q <sub>3</sub> - Q <sub>1</sub> )	Sample size	Wilcoxon signed rank test (T+)	P - Value
	Bef	Aft	Median diff.				
<b>Group A</b>	3	1	2	1 (2 - 1)	30	465	< 0.001
<b>Group B</b>	3	1	2	0 (2 - 2)	30	378	< 0.001

Using one tailed Wilcoxon signed rank test, to test the hypothesis –

H<sub>0</sub> : Median reduction in Margin and surface score before and after treatment is zero.

H<sub>1</sub> : Median reduction in Margin and surface score before and after treatment is greater than zero.

For group A, the median reduction in margin and surface score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in Margin and surface for Group A.** For group B, the median reduction in margin and surface score after treatment is significant (P-value < 0.001) at 5% level

of significance. **i.e. it can be said that There is significant reduction in margin and surface for Group B.**

**Comparative Analysis of Groups:**

Using Mann-Whitney U test, to test the hypothesis –

$H_0$  : Reduction in margin and surface score for group A and group B are equal (equally distributed)

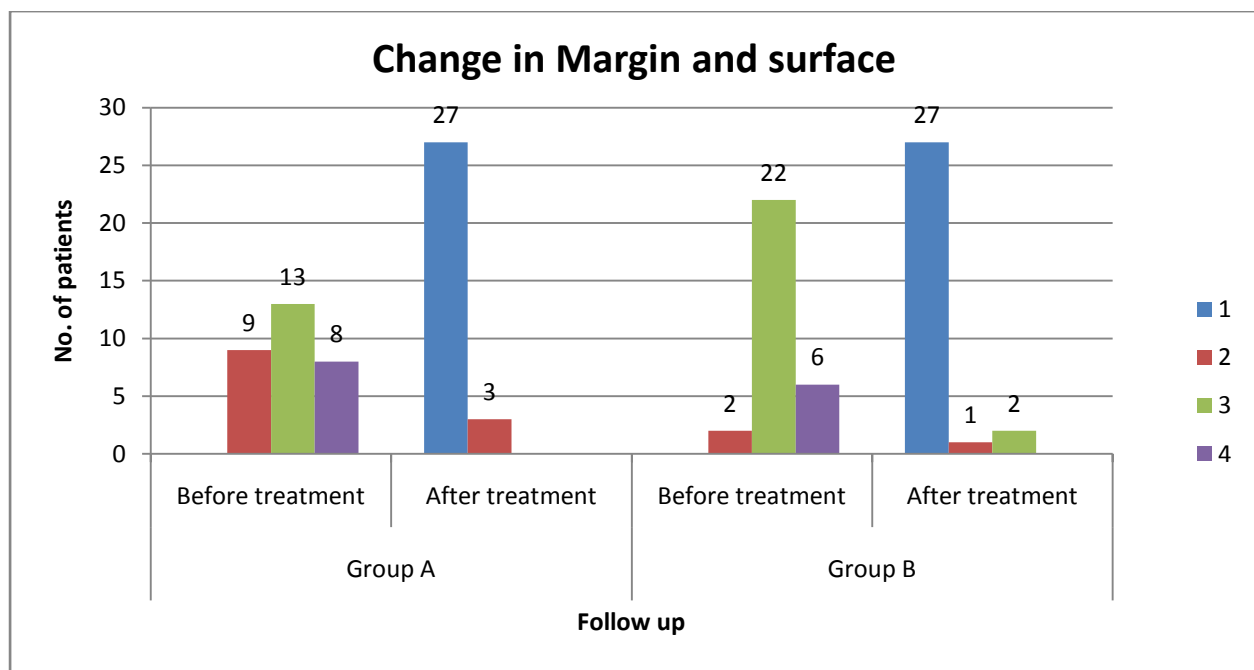
$H_1$  : Reduction in margin and surface score for group A and group B are not equal(not equally distributed)

**Table No.58 Statistical analysis Of vranoushta in the study**

<b>Group</b>	<b>Median difference  bef-aft </b>	<b>Mean of difference  bef - aft </b>	<b>S.D. of difference  bef - aft </b>	<b>Mann-Whitney U statistic</b>	<b>P- Value</b>
<b>Group A</b>	2	1.87	0.730	393	0.352
<b>Group B</b>	2	1.97	0.809		

Distribution of “reduction in margin and surface score” for group A and group B is not significantly different. (p -value = 0.352) Thus **both drug A and drug B can be considered as equally effective in reduction of Margin and surface.**

**Graph No.13**



**Table No.59 Statistical analysis Of vranoushta in the study**

Margin and surface	1		2		3		4	
	count	%	count	%	count	%	count	%
Group A	0	0.00%	9	30.00%	13	43.33%	8	26.67%
Group B	27	90.00%	3	10.00%	0	0.00%	0	0.00%

## 5.Size(Vranakar)

**Table No.60 Statistical analysis Of vranakar in the studty**

Vranakar	Median score			IQR of diff. ( $Q_3 - Q_1$ )	Sample size	Wilcoxon signed rank test (T+)	P - Value
	Bef	Aft	Median diff.				
<b>Group A</b>	4	2	2	1 (2 - 1)	30	465	< 0.001
<b>Group B</b>	4	2	2	0 (2 - 2)	30	435	< 0.001

Using one tailed Wilcoxon signed rank test, to test the hypothesis –

$H_0$  : Median reduction in Vranakar score before and after treatment is zero.

$H_1$  : Median reduction in Vranakar score before and after treatment is greater than zero.

For group A, the median reduction in vranakar score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in Vranakar for Group A.**

For group B, the median reduction in vranakar score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in vranakar for Group B.**

### **Comparative Analysis of Groups:**

Using Mann-Whitney U test, to test the hypothesis –

$H_0$  : Reduction in vranakar score for group A and group B are equal (equally distributed)

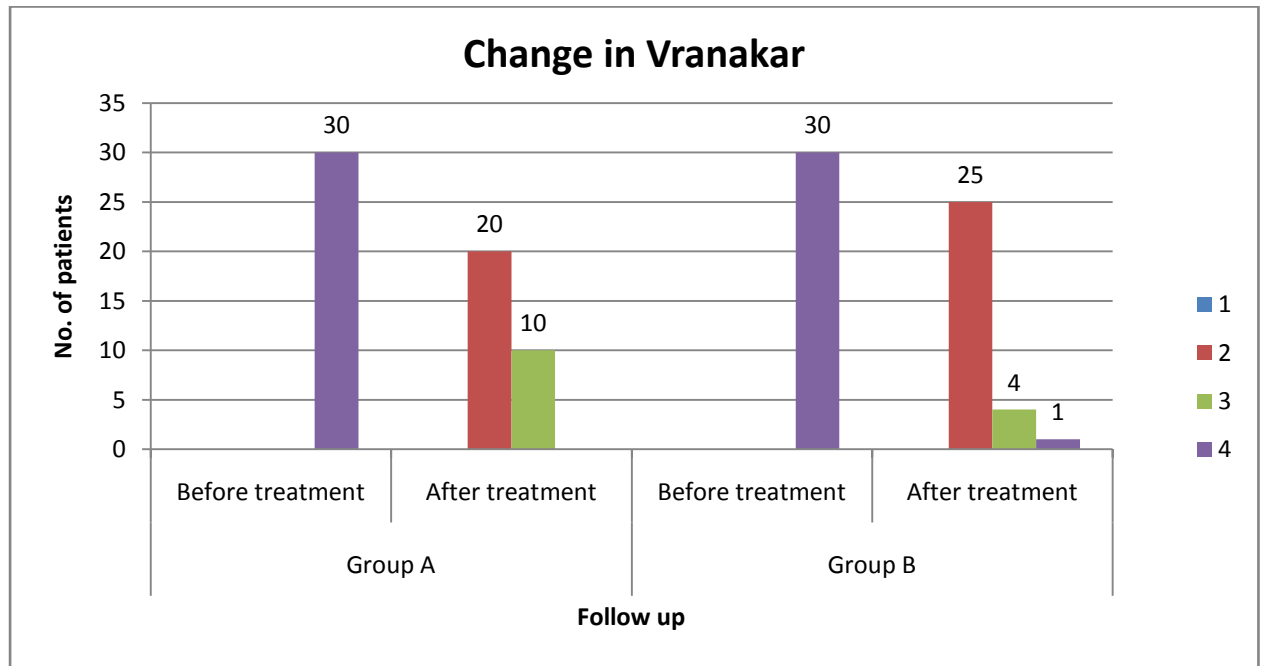
$H_1$  : Reduction in vranakar score for group A and group B are not equal(not equally distributed)

**Table No.61 Statistical analysis Of vranakar in the study**

Group	Median difference  bef-aft	Mean of difference  bef - aft	S.D. of difference  bef - aft	Mann-Whitney U statistic	P- Value
Group A	2	1.67	0.479	380	0.172
Group B	2	1.80	0.484		

Distribution of "reduction in vranakar score" for group A and group B is not significantly different. (p -value = 0.172) Thus **both drug A and drug B can be considered as equally effective in reduction of vranakar.**

**Graph No.14**



**Table No.62 Statistical analysis Of vranakar in the study**

Vranakar	1		2		3		4	
	count	%	count	%	count	%	count	%
Group A	0	0.00%	0	0.00%	0	0.00%	30	100.00%
Group B	0	0.00%	20	66.67%	10	33.33%	0	0.00%

## 6.Tenderness(Sparshasahatwa)

**Table No.63 Statistical analysis Of sparshasahatwa in the study**

Tenderness	Median score			IQR of diff. (Q <sub>3</sub> - Q <sub>1</sub> )	Sample size	Wilcoxon signed rank test (T+)	P - Value
	Bef	Aft	Median diff.				
<b>Group A</b>	3	1	2	1.75 (2.75 - 1)	30	378	< 0.001
<b>Group B</b>	3	1	2	1 (3 - 2)	30	378	< 0.001

Using one tailed Wilcoxon signed rank test, to test the hypothesis -

H<sub>0</sub> : Median reduction in Tenderness score before and after treatment is zero.

H<sub>1</sub> : Median reduction in Tenderness score before and after treatment is greater than zero.

For group A, the median reduction in tenderness score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in Tenderness for Group A.**

For group B, the median reduction in tenderness score after treatment is significant (P-value < 0.001) at 5% level of significance. **i.e. it can be said that There is significant reduction in tenderness for Group B.**

### Comparative Analysis of Groups:

Using Mann-Whitney U test, to test the hypothesis –

$H_0$  : Reduction in tenderness score for group A and group B are equal (equally distributed)

$H_1$  : Reduction in tenderness score for group A and group B are not equal(not equally distributed)

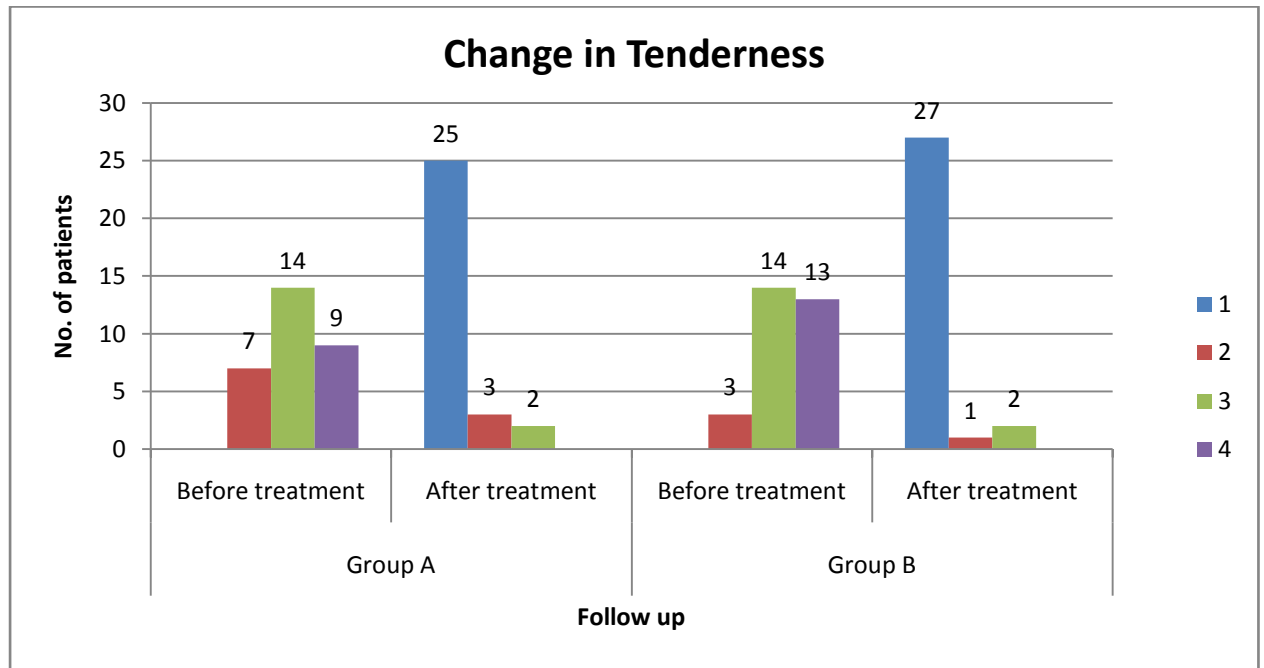
**Table No.64 Statistical analysis Of sparshasahatwa in the study**

Group	Median difference  bef-aft	Mean of difference  bef - aft	S.D. of difference  bef - aft	Mann-Whitney U statistic	P- Value
Group A	2	1.83	0.950	352.5	0.128
Group B	2	2.17	0.950		

Distribution of “reduction in tenderness score” for group A and group B is not significantly different. (p -value = 0.128) Thus **both drug A and drug B can be considered as equally effective in reduction of Tenderness.**



**Graph No.15**



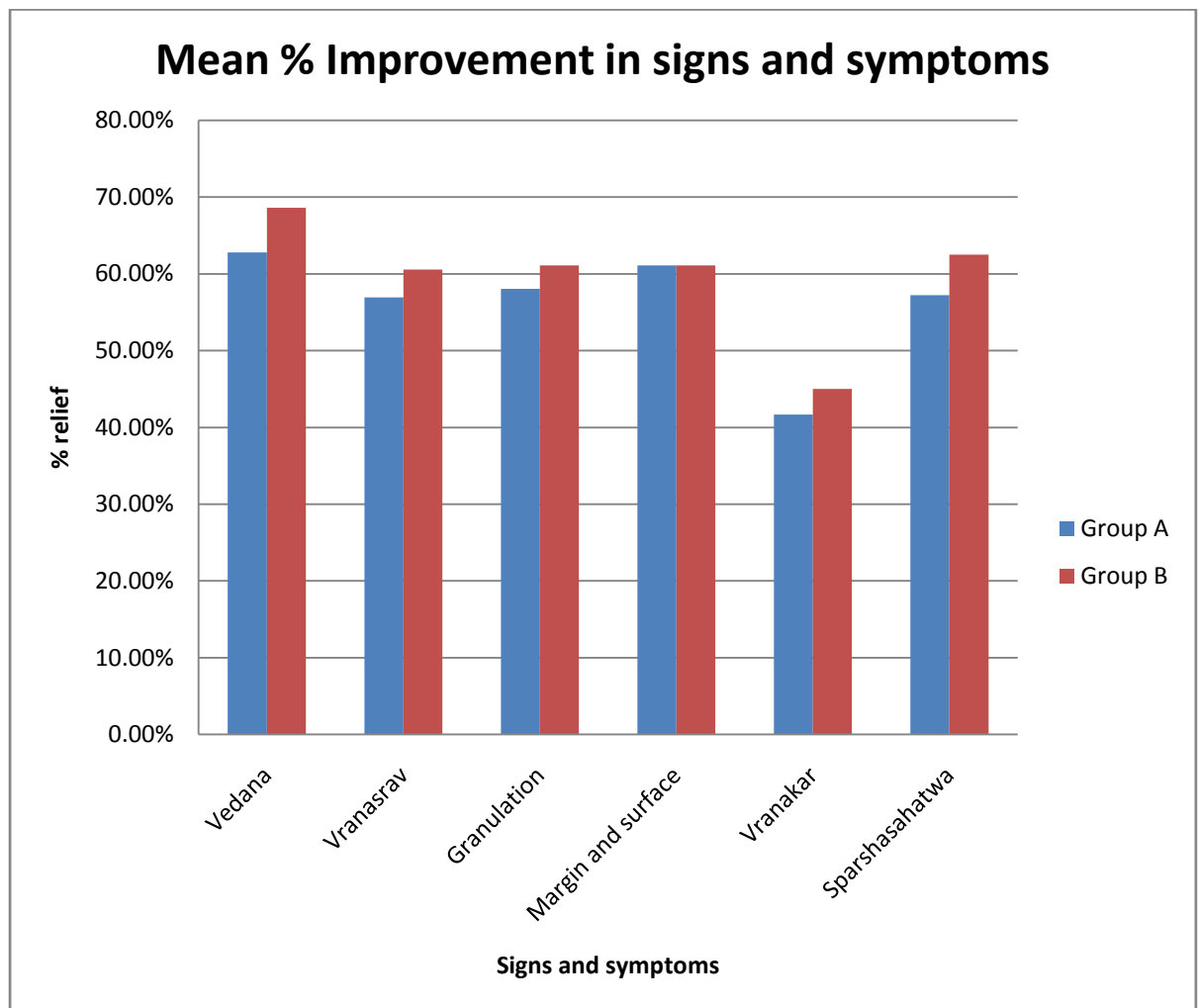
**Table No.65 Statistical analysis Of sparshasahatwa in the study**

Sparshasahatwa	1		2		3		4	
	count	%	count	%	count	%	count	%
Group A	0	0.00%	7	23.33%	14	46.67%	9	30.00%
Group B	25	83.33%	3	10.00%	2	6.67%	0	0.00%

**Table No.66 Comparative effect of therapy**

<b>Parameter</b>	<b>Effect of therapy</b>				<b>Comparative efficacy</b>
	<b>Group A</b>		<b>Group B</b>		
	<b>Remark</b>	<b>Mean % improvement</b>	<b>Remark</b>	<b>Mean % improvement</b>	
Vedana	Significant	62.78%	Significant	68.61%	Equally effective
Vranasrav	Significant	56.94%	Significant	60.56%	Equally Effective
Granulation	Significant	58.06%	Significant	61.11%	Equally Effective
Margin and surface	Significant	61.11%	Significant	61.11%	Equally Effective
Vranakar	Significant	41.67%	Significant	45.00%	Equally Effective
Sparshasahatwa	Significant	57.22%	Significant	62.50%	Equally Effective

**Graph No.16**



## OVERALL EFFECT OF THERAPY

All the 6 parameters – vedana, vranasrav, granulation, margin and surface, vranakar & sparshasahatwa were considered while evaluating overall effect of the therapy. The criteria for overall effect of therapy is -

**Table No.67 Overall effect of the therapy**

<b>Overall Effect (patient wise)</b>	<b>Criteria</b>
Marked improvement	75% or more improvement in signs and symptoms
Moderate improvement	50% - < 75% improvement in signs and symptoms
Mild improvement	25% - < 50% improvement in signs and symptoms
Unchanged	< 25% improvement in signs and symptoms

### **Distribution of patients according to relief:**

**Table No.68**

<b>Overall Effect (patient wise)</b>	<b>No. of patients</b>			
	<b>Group A</b>		<b>Group B</b>	
	<b>Count</b>	<b>%</b>	<b>Count</b>	<b>%</b>
Marked improvement	00	00.00%	00	00.00%
Moderate improvement	26	86.67%	28	93.33%
Mild improvement	04	13.33%	02	06.67%
Unchanged	00	00.00%	00	00.00%

In group A, Out of 30 patients, 26 patients (87%) were moderately improved while 4 patients (13%) were showing mild improvement.  
In group B, 28 patients (93%) were observed with moderate improvement while 2 patients (7%) were showing mild improvement.

**Graph No.17**

