



COMPARE THE EFFECTIVENESS OF ALOE VERA Vs SILVER SULFADIAZINE APPLICATION ON WOUND HEALING AMONG BURNS PATIENTS

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ABSTRACT

Among injuries Burns are among the most devastating and a major global public health issues. It is the fourth most common type of trauma worldwide. Persons who got burned are risk of getting infection Potential signs of infection include Change in color of the burnt area or surrounding skin Purplish discoloration, swelling, change in thickness of the burn (the burn suddenly extends deep into the skin) Greenish discharge or pus and Fever. The aim of the study is to compare the effectiveness of Aloe Vera Vs Silver sulfadiazine application on wound healing among burns patient, design of the study was quasi experimental where factorial design was used. Total sample size of 30 patients out of which 15 were experimental group I and 15 were experimental group II. Purposive sampling technique was used to select the sample, method of data collection was experimental group I received Aloe Vera application twice a day for 7 days where as experimental group II received Silver Sulfadiazine twice a day for 7 days, pretest was done by using Burns wound healing observation scale whereas post test was done by using the same scale on the 8th day results of the study from the findings it can be concluded that majority (46%) burns patients were in the age group of 21-30 Years, Most (60%) were females, Highest percentage (40%) of burns patients have 11-20% TBSA, All burns patients were affected by thermal burns, Highest percentage (67%) of burns Patients were admitted on the day of incident, Most (73%) of burns patients have no Comorbid factors. The Paired 't' value for experimental; group I and II 15.8 and 18.8 respectively. The unpaired't' value was 2.58, the difference in mean Percentage in experimental group I and II was 6.6. Conclusion Aloe Vera as well as Siver Sulfadiazine both can be used for wound healing among burns patient, But Silver sulfadiazine was more effective than Aloe Vera on wound healing burns patients.

KEYWORDS :

1.INTRODUCTION

Injuries represent one of the most important public health problems faced by both developing and industrialized nations today. Injuries may be extensive burn profoundly affects the patient's physique, psyche, financial situation and family. Patients who suffer from extensive burn injuries frequently die, while others suffer from painful physical recovery.

Burn injuries are among the most devastating of all injuries and a major global public health crisis. Burns are the fourth most common type of trauma worldwide, following traffic accidents, falls, and interpersonal violence. A burn is a type of injury caused by thermal, chemical, electrical, radioactive, friction. Most burns affect only the skin (epidermis and dermis) rarely deeper tissues such as muscles, bones, blood vessels also injured, People who get burned are very prone to infection Potential signs of infection include Change in color of the burnt area or surrounding skin Purplish discoloration, swelling, change in thickness of the burn (the burn suddenly extends deep into the skin) Greenish discharge or pus and Fever.

Aloe Vera promote healthy tissue growth by reducing the inflammation and killing bacteria and other organisms.. Its cooling effect offers instant relief from burns, Aloe seems to be able to speed wound healing by improving blood circulation through the area and preventing cell death around a wound.

Silver sulfadiazine is the most commonly used topical antibiotic agent for both ambulatory and hospitalized burn patients.. The silver ion binds to the microorganism's nucleic acid, releasing the sulfadiazine, which then interferes with the metabolism of the microbe . It is easy to use and painless when applied and can be used with or without a dressing. Silver sulfadiazine has excellent broad-spectrum antibacterial coverage against *Pseudomonas aeruginosa* and other gram-negative enteric bacteria.

1.2 Need for Study

Among the 19,655 cases of complications pulmonary complications including pneumonia (3,361), acute respiratory

distress syndrome (885), and respiratory failure (1,944) constituted the greatest percentage of cases (31%). Cellulitis (1,988) and wound infections (1,950) were responsible for 17% of the complications. Septicemia (1,672) and other infections (1,250) were the other categories that included infectious complications (15%). In patients with severe burns over more than 40% of Total Burns Surface Area, 75% of deaths are due to sepsis from burn wound infection or other infection complication

1.3 OBJECTIVES:

- To assess the effectiveness of Aloe Vera application on wound healing among burns in experimental group I.
- To assess the effectiveness of Silver Sulfadiazine application on wound healing among burns in experimental group II.
- To compare the effectiveness of Aloe Vera Vs Silver Sulfadiazine application on wound healing among burns patients in experimental group I & II.
- To find out the association between post test scores on level of wound healing among burns patients in experimental group I & II with their demographic variables

1.4 HYPOTHESIS:

H₁: There is a significant effectiveness of Aloe Vera application on wound healing among burns patient in experimental group I.

H₂: There is a significant effectiveness of Silver Sulfadiazine application on wound healing among burns patient in experimental group II.

H₃ : There is significant high effectiveness of Aloe Vera application on wound healing when compared to Silver Sulfadiazine application among burns patients.

H₄ : There is significant association between post test scores of wound healing among burns patient in experimental group I & II with their demographic variables.

1.5 CONCEPTUAL FRAMEWOEK:

Conceptual framework based on Lydia hall's Core, Care, Cure model

II MATERIALS AND MODELS

2.1 Research Approach

Quantitative, evaluative approach was used to test the effectiveness of intervention

2.2 Research Design

A quasi experimental with factorial design was chosen for this study to compare the effectiveness of Aloe Vera Vs. Silver Sulfadiazine on wound healing among burns Patients.

2.3 Variables

Independent Variable - Aloe Vera vs. Silver Sulfadiazine

Dependent Variable - Wound Healing

2.4 Settings of the Study

Kanyakumari Government Medical College & Hospital, Asaripallam

2.5 Population and Sample

Population - Burns Patient

Sample - Burns patients admitted at Kanyakumari Government Medical College & Hospital, Asaripallam

The total sample size was 30 burns patients out of which 15 were in experimental group I and 15 were in experimental group II

Purposive sampling technique was used for this study

2.6 SAMPLE SELECTION CRITERIA

Burns patient

- Age group of 20 – 50 years.
- Both the gender.
- Burns patient upto 30% Total Burns Surface Area (TBSA)
- Burns patient with first degree (superficial burns)
- Who gave consent to participate in this study.
- Who are present during the period of data collection.

Exclusion criteria

- Burns patient
- Who were having allergy to Aloe Vera and silver Sulfadiazine.

2.7 Tools & Technique

PART I

DEMOGRAPHIC VARIABLES

It consists of demographic characteristic of burns patients, i.e. Age, Gender, Burns percentage in Total Burn Surface Area (TBSA), Causes of burns, Days of hospitalization, and Co-morbid factors that affect wound healing.

2.8 Tools and technique:

BURNS WOUND HEALING OBSERVATION SCALE which consist of four parameters colour, consistency, surface, pliability. The minimum score is 4 and the maximum score is 12. Split half method (spearman Brown Formula) was used to test the reliability of the tool and the tool was found reliable ($r^1=0.9$).

2.9 Data collection Procedure:

Prior to the collection of the data, permission was obtained from the concered authority. The investigator collected the data from both experimental group I and experimental group II. The investigator was selected the experimental group I and experimental group II by purposive sampling. Pre test was conducted among burns patient with first degree upto 30%TBSA by using Burns wound healing observation scale to assess the level of wound healing. In a day an average of 1-2 patients were observed the time for observation varied from 5-10 minutes. Immediately after pre test Aloe Vera Vs Silver Sulfadiazine was applied on wound among burns patient at the duration of 15-20 minutes in twice a day for 7 days.

Observations was made after 7 days of application of Aloe Vera Vs Silver Sulfadiazine by using Burns wound healing observation scale among burns patients.

III. RESULTS AND DISCUSSION

3.1 distribution of socio demographic characteristics under study

Distribution of samples according to their age group shows that more or less similar percentage (46% and 40%) of burns patients were in the age group of 21-30 years in both the groups. However similar percentage (27%) of burns patients were in the age group of 31-40 years in both the groups and only 27% of burns patients in experimental group I and 33% of burns patients in experimental group II were in the age group of 41-50 years

Distribution of samples according to their gender shows that, most (60% and 53%) of burns patients were females in both the groups and only (40%and 47%) of burns patients were males

According to burns percentage in Total Burns Surface Area in experimental group I and II shows that, most (47% and 40%) of burns patients had less than 10% Total Burns Surface Area in experimental group I and 11-20% Total Burns Surface Area in experimental group II. However similar percentage (33% and 33%) of burns patients had less than 10% and 11-20% of Total Burns Surface Area in both the groups and lowest percentage (20% and 27%) of burns patients had 21-30% of Total Burns Surface Area in both the groups.

According to the causes of burns in experimental group I and II shows that all (100%) burns patients had thermal burns in both the groups

According to the days of hospitalization among burns patients in experimental group I and II shows that majority (87% and 67%) of burns patients in experimental group I and II were admitted in the hospital on the day of incidence. However 13% of burns patients in experimental group I were admitted in the hospital on the 2nd day of incidence, whereas in experimental group II 20% of burns patients were admitted in hospital on the 2nd day of incidence and only 13% of burns patients in experimental group II were admitted in hospital on the 3rd day of incidence

Distribution of samples according to their Co-morbid factors that affect the wound healing among burns patients in experimental group I and II shows that most (80% and 73%) of patients had no co-morbid factors of wound healing in both the groups. However more or less similar percentage (13% and 20%) of patients had co-morbid factors of Diabetes mellitus and only 7% of patients had hypertension in both the groups

3.2 Frequency and percentage distribution of pre and post test scores of wound healing among burns patients in experimental group I. (N₁ = 15)

Level of wound healing	Pre test score		Post test score	
	Frequency (N ₁)	Percentage (%)	Frequency (N ₂)	Percentage (%)
Poor	15	100	-	-
Moderate	-	-	8	53
Good	-	-	7	47

3.3 Paired "t" test value of pre and post test scores of experimental group I

S. No	Wound healing parameters	Paired 't' value	Table value	Level of significance
1.	Colour	10.8	2.15	P < 0.05 significant
2.	Consistency	5.62	2.15	P < 0.05 significant
3.	Surface	3.08	2.15	P < 0.05 significant
4.	Pliability	19.3	2.15	P < 0.05 significant
5.	Total	15.8	2.15	P < 0.05 significant

3.4 Frequency and percentage distribution of pre and post test scores of wound healing among burns patients in experimental group I (N₁= 15)

Level of wound Healing	Pre test score		Post test score	
	Frequency (N ₁)	Percentage (%)	Frequency (N ₂)	Percentage (%)
Poor	13	87	-	-
Moderate	2	13	6	40
Good	-	-	9	60

3.5 Paired "t" test value of pre and post test scores of experimental group II (N₂= 15)

S. No	Wound healing Parameters	paired 't' value	Table value	Level of significance
1.	Colour	16.7	2.15	P < 0.05 significant

3.7 Area wise Comparison of Mean, SD, and mean percentage of experimental group I and II post test scores on level of wound healing. (N₁= 15) (N₂=15)

S. No	Wound healing parameters	Maximum score	Post test scores						Difference in Mean (%)
			Experimental group I			Experimental group II			
			Mean	SD	Mean (%)	Mean	SD	Mean (%)	
1.	Colour	3	2.46	0.72	82	2.8	0.35	93.3	11.3
2.	Consistency	3	2.3	0.48	76.6	2.4	0.5	80	3.4
3.	Surface	3	2.0	0	66.6	2.06	0.25	68.6	2
4.	Pliability	3	2.2	0.41	73.3	2.4	0.52	80	6.7
5.	Total	12	9.0	1.0	75	9.8	0.77	81.6	6.6

CONCLUSION

From the findings of the study can be conclude that,

- Highest were in the age group of 21-30years.
- Most of them were females.
- Most of them have less than 10% Total Burns Surface Area.
- Majority of them are affected by thermal burns.
- Most of them were admitted on the day of incident.
- Majority of the burns patients have no Co- morbid factors.
- Aloe Vera was effective on wound healing among burns patients.
- Aloe Vera was more effective in the areas of colour and Pliability on wound healing among burns patients.
- Silver Sulfadiazine was effective on wound healing among burns patients.
- Silver Sulfadiazine was more effective in the areas of colour and Pliability on wound healing among burns patients.
- Silver Sulfadiazine was more effective on wound healing among burns patients than Aloe Vera.
- In experimental group I significant association between the post test scores of wound healing with their demographic variables like age, burns percentage in Total Burns Surface Area.
- In experimental group II significant association between the post test scores of wound healing with their demographic variables like burns percentage in Total Burns Surface Area , Co- morbid factors.

NURSING IMPLICATIONS

The studies have implications in nursing practice, nursing practice and nursing administration, nursing education and research.

Nursing practice

Aloe Vera and Silver Sulfadiazine can be used by the nursing personnel working in hospitals for reinforcing their practices.

- Aloe Vera and Silver Sulfadiazine can be used in various settings.
- Aloe Vera and Silver Sulfadiazine can be used to treat burns patients with various Percentage.

Nursing Education

- Nursing educator should educate nursing professionals to apply this medicines and find out the effectiveness.
- The researcher educates the health professionals to apply this medicines to improve the wound healing among burns patients.

2.	Consistency	3.49	2.15	P < 0.05 significant
3.	Surface	3.49	2.15	P < 0.05 significant
4.	Pliability	11.07	2.15	P < 0.05 significant
5.	Total	18.8	2.15	P < 0.05 significant

3.6 Unpaired't' test value of post test scores of experimental group I and II.

S. No	Wound healing parameters	Unpaired 't' value	Table value	Level of significant
1.	Colour	2.12	2.05	P<0.05 Significant
2.	Consistency	1	2.05	P>0.05 Not significant
3.	Surface	1.5	2.05	P>0.05 Not significant
4.	Pliability	2.93	2.05	P<0.05 Significant
5.	Total	2.5	2.05	P<0.05 Significant

Nursing administrator

- Nursing administrator can foster the use of Aloe Vera and Silver Sulfadiazine to treat burns patients in clinical settings.
- Nursing administrator can organize conference, seminars, and workshop for nurses working in hospitals to encourage a positive attitude on Aloe Vera on wound healing for burns patients.
- Nursing administrator can support the nurses for conducting research on comparing various other complementary therapies.

Nursing Research

This study may be used for further reference, Further large scale study can be done as replication to standardize the application of Aloe Vera and Silver Sulfadiazine on wound healing among burns patients.

RECOMMENDATION

- A longer period of intervention can be studied for more reliability and effectiveness.
- A large scale of studies can be carried out to generalize the findings.
- A comparative study can be undertaken to compare the effectiveness of Aloe Vera with other medicines like Vaseline gauze, Acticoat etc .
- A comparative study can be undertaken to compare the effectiveness of Aloe Vera with honey on wound healing among burns patients.

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