

## Conventional versus Contemporary Burn Dressing: A Comparative Study at AL-Yarmouk Teaching Hospital, Burn Center

Amer M. Kasim, MScN<sup>1</sup>, Haleema Y. Kadhim, PhD<sup>2</sup>

<sup>1</sup>(Academic Nurse Specialist, Ministry of Health, Iraq)

<sup>2</sup>(Assistant Professor, Department of Adult Nursing, College of Nursing, University of Baghdad, Iraq)

Corresponding Author: Amer M. Kasim

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### Abstract

**Objectives:** The present study aims to compare contemporary dressing (Acticoat) and conventional (Flamazine) with respect to speed of wound healing, pain score, cost effectiveness and final complications. Moreover, find out the relationship between socio-demographic data of patient such as age, gender with speed of wound healing.

**Methodology:** A comparative study was conducted to compare conventional and contemporary burn dressing which is currently used for patients with burn injury in burn center during the period (January 2 /2017 until May 1 /2017). The present study is carried out at AL-Yarmouk Teaching Hospital/ Burn Center in Baghdad Governorate. Non-probability (purposive) sample of (40) patients were selected. They were selected randomly from patients that admitted in burn center. Approach of data collection self-report instrument is constructed for the purpose of the study. It is consisted of six parts; the first is the demographic data which is consisted of (13) items and the second is pain assessment during dressing change, and the third part is scope of wound healing consisted four items; the first is the days require for healing, and the second is number of dressing change during hospitalization, third is time interval for dressing change, and fourth is time to resolve all sign of local infection, the fourth part scope of complications (scar formation) consisted (2) items, the fifth part is scope of cost effectiveness (financial burdens upon patients), the six part is discharge assessment consisted (5) items. Validity and reliability of the instrument is determined through pilot study. Data collection is initiated during the period from 2<sup>nd</sup> of February to 1<sup>st</sup> of August, 2017 in order to find out the comparison between conventional and contemporary burn dressing. Data are analyzed through the use of SPSS (Statistical package for Social Sciences) version 20.0 application statistical analysis system and excel application. Descriptive and inferential statistical data analysis approaches are employed.

**Results:** Results of data analysis depicted that patients are severely affected by contemporary burn dressing.

**Conclusion:** The study concluded that the patients treated with contemporary burn dressing (Acticoat) had good response especially to pain level, number of dressing change; days require for healing, and cost effectiveness, better than conventional dressing silver sulfadiazine.

**Recommendations:** The researcher suggests that establishment of training courses for the nursing staff to increase their knowledge and practice about recent burn dressing and new technologies that use to treat and manage burn injury, and to provide modern burn dressing and introduce recent techniques that used in the treatment and management burns wound. Created specialized centers for the treatment burns wound.

**Key words:** Conventional dressing, Contemporary dressing, Burn,

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### I. Introduction

Burn is an injury resulting from exposure to heat, chemical, radiation, cold injuries or electrical current. A transfer of energy from a source of heat to human body initiates a sequence of physiological event that in the most severe cases lead to irreversible tissue damage. Burn ranges in severity from a minor loss of small segments of the outermost layer of the skin to a complex injury involving all body systems like, cardiovascular system, respiratory, integumentary, gastrointestinal, urinary, and metabolism, treatments differs from simple application of a topical wound dressing in an outpatient clinic or general practice to an invasive, multisystem, interprofessional team approach in the aseptic environment of a burn center <sup>(1)</sup>. Over the last two decades there have been worldwide improvements in the overall care of burn survivors and ultimately an increase in survival rate. These include nutrition, management of hyper metabolism, resuscitation, understanding of post-burn immune response, and technological advance in surgery and wound care products <sup>(2)</sup>. When selecting a suitable burn dressing there are several factors needs to be taken into consideration these include, depth of burn, site of

burn, extent of burn, type of first aid, cause of burn. Moreover, patient ability to manage dressing, health professional ability to manage dressing. In addition, functional impact of dressing on patient life style, associated pain, time of healing. Finally, the cost <sup>(3)</sup>. The number of patients estimated by the American Burn Association that approximately 468, 000 patients suffer from burn injuries that require medical treatment in 2013 <sup>(4)</sup>. Unintentional injuries from flames and burns are the fifth most common cause of death in the United States. Patients who die because burn tends to be older present to the hospital during winter months and suffer from acute burns to the torso or multiple body regions <sup>(5)</sup>. Throughout the years, the objectives of topical burn dressing have been changed; at the beginning of the Twenty century it was understood that systematic changes seen in patients caused by release of toxins from the burn wound, and the goal of topical dressing was to restrict or filtrate toxins before being absorbed. The second goal is to use topical management of burn wound to dry out burn wound or to make a rigid clot to decrease exudates, drainage or fluid loss, usually they used a number of some topical dressing for this goals such as 5% or 10% silver nitrate, gentian violet and tannic acid <sup>(6)</sup>. Conventional burn dressing include gauze, lint, cotton wool, bandages natural or synthetic, and topical ointments or cream such as flammazine used as primary or secondary dressing to protect wound from infection; gauze dressing is made of woven and non woven fibers of cotton, rayon, polyesters provide an isolated layer to protect wound from infectious microorganisms. Some of these products are used for absorbing exudates and discharge in open wound because fibers have the ability to absorb fluids. Gauze dressing also requires to be changed several times to protect from maceration of healthy tissues and its less cost effectiveness; because of excess of wound drainage the dressing become more moisture and tend to become adherent to the wound making it more painful when remove it <sup>(7)</sup>. Generally conventional burn dressings are indicated for clean and dry wound with mild exudates or used as a secondary dressing. For long time, the classical burn dressings failed to provide moist environment to the burn wound, for this reason they were replaced by modern dressings with more advance formulation <sup>(8)</sup>. Sophisticated modern burn dressings are to facilitate the function of injured skin rather than to cover it. The main focuses of these dressings is to protect the wound from dehydration and facilitate speed of wound healing that depend on the cause of burn and degree. Contemporary burn dressings usually based on synthetic polymers and are classified to passive, interactive and bioactive products. Passive products are non-occlusion such as gauze and tulle dressings used to cover the wound to retrieve skin functions. Interactive dressings are semi-occlusive or occlusive which are available in many forms such as films, foam, hydrogel, and hydrocolloids <sup>(9)</sup>. Improvement in technology and progress in understanding of the process of wound healing have led to wide expansion in the range of dressing selection that can be used for treating burn. Burn dressing now is available in wide range in different types and categories based upon the materials used in their manufacture; these categories include: films, foams, composites, spray, and gel. On the other hand, available alternative traditional gauze dressings are the biological skin replacement and the bioengineered skin substitutes which include autologous cultured and non-cultured products; the recent method biosynthetic skin dressing that are available to produce physiological wound closure until the epidermal layer has repaired <sup>(10)</sup>.

## **II. Methodology**

A descriptive study was conducted to compare conventional and contemporary burn dressing which are currently used for patients with burn injury in burn center during the period (2<sup>nd</sup> January /2017 until 1st May /2017). Non probability (purposive- sample) consists of 40 patients had been chosen in this study from Al Yarmouk Teaching Hospital/ Burn center. Data collection from (2<sup>nd</sup> January 2017 until 1<sup>st</sup> May 2017) with estimate time requires for clinical observation and other data collection from patient record was 5-6 hours. The study was carried out in Baghdad City one burn center in Al- Yarmouk Teaching Hospital that take care patients with burn injury. This center provides health care to the patients with burn wound injury including medical, surgical, and cosmetic intervention attending to this center for receiving treatment, dressing change, wound care, blood and their products, doing all investigation, physiotherapy and rehabilitation managements. A self-report instrument is constructed for the purpose of the study. It is consisted of six parts; the first is the demographic data which is consisted of (13) items and the second is pain assessment during dressing change, and the third part is scope of wound healing consisted four items; the first is the days require for healing, and the second is number of dressing change during hospitalization, third is time interval for dressing change, and fourth is time to resolve all sign of local infection, the fourth part scope of complications(scar formation) consisted(2) items, the fifth part is scope of cost effectiveness(financial burdens upon patients), the six part is discharge assessment consisted (5) items. Validity and reliability of the instrument is determined through pilot study. Data collection is initiated during the period from 2<sup>nd</sup> of February to 1<sup>st</sup> of August, 2017 in order to find out the comparison between conventional and contemporary burn dressing. Data are analyzed through the use of SPSS (Statistical package for Social Sciences) version 20.0 application statistical analysis system and excel application. Descriptive and inferential statistical data analysis approaches are employed.

### III. Results

**Table (1): Distribution of the sample according to their Socio-demographic Characteristics**

No.	Characteristics	F	%	
1	<b>Age:</b>	15 – 24 years	18	45
		25 – 34 years	12	30
		35 – 44 years	8	20
		45 – 54 years	2	5
		<i>Total</i>	40	100
2	<b>Gender:</b>	Male	16	40
		Female	24	60
		<i>Total</i>	40	100
3	<b>Level of education:</b>	Primary school	10	25
		Intermediate school	5	12.5
		Secondary school	17	42.5
		College	8	20
		<i>Total</i>	40	100
4	<b>Occupation:</b>	Housewife	22	55
		Self-employed	9	22.5
		Employer	9	22.5
		<i>Total</i>	40	100

**Table (1)** The analysis in this table shows that more than half of patients are female (60%) who are young with age group ranging between 15 – 24 years old (45%), about third of them are associated with age group 25 – 34 years old (30%). Regarding the level of education, the highest percentage is reported with secondary school education (42.5%), 25% of them are graduated from the primary school and 20% are graduated from college. The occupational status of patients indicates that more than half of the patients are housewives (55%) and the remaining percentages are distributed equally for self-employed and governmental-employed (22.5%).

**Table (2): Distribution of the Sample according to their Clinical Characteristics Related to Burns**

No.	Characteristics	F	%	
1	<b>Duration of hospitalization:</b>	< 8 days	1	2.5
		8 – 12 days	19	47.5
		13 – 16 days	5	12.5
		17 – 20 days	3	7.5
		21 – 24 days	4	10
		25 ≤ days	8	20
		<i>Total</i>	40	100
2	<b>Time from burn insult:</b>	< 24 hours	32	80
		> 24 hours	8	20
		<i>Total</i>	40	100
3	<b>Causes of burns:</b>	Chemical	2	5
		Electrical	3	7.5
		Thermal	35	87.5
		<i>Total</i>	40	100
4	<b>Types of thermal burn:</b>	Flame	27	67.5
		Scaled	13	32.5
		<i>Total</i>	40	100
5	<b>Degree of burn:</b>	First degree	0	0
		Second degree	40	100
		<i>Total</i>	40	100
6	<b>Percentage of burn:</b>	≤ 18 %	10	25
		≤ 36 %	20	50
		≤ 44 %	4	10
		≤ 52 %	5	12.5
		≤ 60 %	1	2.5
		<i>Total</i>	40	100
7	<b>Site of burn:</b>	Anterior torso-legs-groin	8	20
		Anterior torso-arms-legs	6	15
		Arms	5	12.5
		Head-face-arms-legs	4	10
		Arms – legs	3	7.5
		Head-face-anterior torso-arms	3	7.5
		Head-face-arms	3	7.5
		Head and face	2	5
		Anterior torso- arms	1	2.5
		Anterior torso	1	2.5

		Legs- groin area	1	2.5
		Legs	1	2.5
		Posterior torso- arms-leg	1	2.5
		Anterior torso-arms- groin	1	2.5
		Total	40	100
8	Past medical history:	None	33	82.5
		Diabetes mellitus	7	17.5
		Total	40	100
9	Past surgical history:	None	31	77.5
		Cesarean section	9	22.5
		Total	40	100
10	Wound intervention before examination:	Yes	22	55
		No	18	45
		Total	40	100
11	Types of intervention:	Cooling	17	42.5
		Herbal	5	12.5
		No intervention	18	45
		Total	40	100
12	Patients' referral:	Outpatient	2	5
		Emergency	38	95
		Total	40	100

Table (2) this table presents the clinical characteristics of the patients that are related to burns; the table reveals that 47.5% of patents are admitted to hospital within 8 – 12 days, and 20% are admitted within more than 25 days. The variable of time from burn insult indicates that most of the patients are insulted within less than 24 hours (80%). Most of the patients are exposed to a thermal type of burn (87.5%), particularly they are exposed to flame (67.5%), and 32.5% are exposed to scaled type of thermal burn; lower percentage has been reported with electrical and chemical burns (7.5% and 5%). The total number of patients are admitted with second degree burns (100%) with ≤ 36 percent of burns (50%), 25% of them are associated with ≤ 18 percent , only one patient is associated with ≤ 60 percent (2.5%). The site of burn indicates that 'anterior torso-legs-groin' is highly frequent site among the patients (20%) followed by the ' anterior torso-arms-legs ' (15%), 12.5% of patients are associate with site of arms and 17.5% are associate with site of 'head-face-anterior torso-arms', 2% of patients with site head and face, other sites are equally distributed of percentage 2.5%. The assessment of past medical history for those patients indicates that only seven patients have diabetes mellitus as medical condition, whereas most of them do not have medical conditions (82.5%). The assessment of past surgical history also shows that 77.5% do not have surgical history and only 22.5% have a cesarean section. More than half of the patients have got intervention at the time of burn insult (55%) in which they get 'cooling' as intervention (42.5%). In term of patients' referral, most of the patients are referred to an emergency department (95%).

**Table (3): Comparison between Contemporary and Conventional Dressing with respect to Score of Pain**

Pain score	Contemporary		Conventional		C.S
	F	%	F	%	
0 (No pain)	0	0	0	0	MWU= 7.000 p-value= 0.001 Sig.= H.S
1 – 3 (Mild pain)	6	30	1	5	
4 – 6 (Moderate)	14	70	8	40	
7 – 10 (Severe pain)	0	0	11	55	
Total	20	100	20	100	
	Mean= 1.70		Mean= 3.50		

F: Frequency, %: Percentage, C.S: Comparative significance  
MWU: Mann- Whitney U test, P: Probability, Sig.: Significant, H.S: High significant

This table describes the comparison between contemporary dressing and conventional dressing among patients with burns; the table shows that patients with conventional dressing type have severe pain (55%), while patients with contemporary dressing type have moderate pain (70%). The finding indicates that there is a high significant difference in comparison between contemporary and conventional dressing with respect to score of pain (p-value=0.001).

**Table (4) Comparison between Contemporary and Conventional Dressing with respect to Wound Healing Speed**

Wound Healing		Contemporary		Conventional		C.S
		F	%	F	%	
Time require d for healing	< 8 days	1	5	1	5	MWU= 137.500 p-value= 0.083 Sig.= N.S
	8 – 9 days	0	0	4	20	

	10 – 11 days	11	55	3	15	
	12 – 13 days	6	30	0	0	
	14 – 15 days	1	5	0	0	
	16 – 18 days	1	5	3	15	
	19 – 21 days	0	0	3	15	
	22 – 25 days	0	0	2	10	
	26 – 30 days	0	0	4	20	
	> 30 days	0	0	0	0	
Total	20	100	20	100		
		Mean= 3.54		Mean= 5.45		
Change dressing	≥ 10 times	20	100	4	20	MWU= 0.001 P-value= 0.001 Sig.= H.S
	11 – 20 times	0	0	4	20	
	21 ≤ times	0	0	12	60	
	Total	20	100	20	100	
		Mean= 1.00		Mean= 2.40		
Change Interval	Daily	0	0	20	100	MWU= 0.001 P-value= 0.001 Sig.= H.S
	3 – 4 days	20	100	0	0	
	Total	20	100	20	100	
		Mean= 2.00		Mean= 1.00		
Resolve Infection	Not infected	14	70	6	30	MWU= 99.000 p-value= 0.003 Sig.= H.S
	2 – 4 days	6	30	6	30	
	5 – 7 days	0	0	8	40	
	Total	20	100	20	100	
		Mean= 1.30		Mean= 2.05		

F: Frequency, %: Percentage, C.S: Comparative significance,

MWU: Mann- Whitney U test, P: Probability, Sig.: Significant, N.S: Not significant, H.S: High significant

The findings in this table reveals that time required for healing is 10-11 days and 12-13 days among patients who have used a contemporary dressing (55% and 30%), but the time required for healing among patients who have use conventional dressing is different; the reports the high percentage with (8-9 days and 26-30 days) (20%); the comparative significant reveals that there is no significant comparison between contemporary and conventional dressing with respect to time required for healing (p-value= 0.083).

Regarding the number of dressing change, the conventional dressing requires to be changed more than 21 times (60%) while contemporary dressing requires ≥ 10 times (100%); the comparative significance indicates that there is a high significant comparison between contemporary and conventional dressing with respect to the number of dressing change (p-value=0.001).

The interval time for changing the dressing is different between the two type of dressing; the Conventional dressing needs to be changed daily (100%), while contemporary dressing need to be changed every 3-4 days (100%); a high significant difference has been seen between contemporary and conventional dressing regarding dressing change interval time (p-value= 0.001).

The time for resolving all signs of local infection reveals that 40% of patients with conventional dressing need 5-7 days for resolving all signs of local infection (40%) whereas most of those patients with contemporary dressing are not infected (70%) and only 30% have infection and required 2-4 days to resolve their signs of infection; there is a high significant comparison between contemporary and conventional dressing with respect to time required for solving the signs of local infection (p-value=0.003).

**Table (5) Comparison between Contemporary and Conventional Dressing with respect to Scope of Complications**

Complications		Contemporary		Conventional		C.S
		F	%	F	%	
Types of scars	Normal	14	70	5	25	MWU= 101.000 p-value= 0.003 Sig.= H.S
	Hyper atrophic	6	30	12	60	
	Keloid	0	0	0	0	
	Firm	0	0	0	0	
	Banding	0	0	0	0	
	Contracture	0	0	3	15	
	Total	20	100	20	100	
	Mean= 0.30		Mean= 1.35			
Pigmentation	Normal	10	50	1	5	MWU= 103.000 p-value= 0.005 Sig.= H.S
	Hypo pigmentation	6	30	10	50	
	Hyper pigmentation	4	20	9	45	
	Total	20	100	20	100	
	Mean= 0.70		Mean= 1.40			

F: Frequency, %: Percentage, C.S: Comparative significance,

MWU: Mann- Whitney U test, P: Probability, Sig.: Significant, H.S: High significant

This table reports that patients with conventional dressing develop a hyper atrophic as complication (60%) while those patients who use a contemporary dressing tend to be normal (70%) and only 30% of them develop a complication of hyper atrophic; the comparison between contemporary and conventional dressing show a high Significant difference between them with respect to types of scars (p-value=0.003).

#### IV. Discussion

**Table 1:** distribution of the sample according to their Socio-demographic characteristics

indicates that the highest percentage (60%) are females who are young within age group (15- 24) years old (45%) and third of them with age group (25-34) years old (30%). Regarding the level of education the highest percentage (42.5%) with secondary school; regarding the occupational status, housewives (55%), this agree with WHO fact sheet (2016) in general, the females and male have similar rates for burn but the higher risk for females is associated with open fire cooking or inherently unsafe cook stoves<sup>(11)</sup>.

**Table 2:** discusses the clinical characteristics of the patients that related to burns wound which reveals that duration of hospitalization of patients with treated with Acticoat within 8-12 days range within 11 days (47.5%) where as patients treated with SSD duration lasting 21- 25 days range within 22 days (30%). This disagree with Muangman (2006) there were no differences in length of stay in hospital in patients who are treated with Acticoat dressing and patients treated with SSD<sup>(12)</sup>. Whereas, more than three quarters (80%) transferred to the hospital during the first 24 hours from insulted to burns injury. This agree with Klein (2009) there are 700,000 burned patients admitted during first the 24 hours in the United States, and more than 80% of the United States population need 2 hours to arrive at a verified burn center<sup>(13)</sup>. Followed by most of patients are exposed to thermal burn injury (87.5%) particularly more than half of patients exposed to flame (67.5%) and (32.5%) are exposed to scaled type of burn injury. This agrees with American Burn Association fact sheet (2011) the total number of burn injuries in the late 20<sup>th</sup> century is estimated to range from 1.4 million to 2 million injured person caused by thermal injury (flame)<sup>(14)</sup>.

The total of study sample is admitted with partial thickness burn injury “second degree” (100%) and half of patients have 36% of TSBA and third of them (25%) is associated with 18% TSBA associated with the more frequent site of burn that “ anterior torso- legs – groin area” (20%) followed by “anterior torso-arms- legs” (15%) which disagrees with National Burn Repository (2011) 72% of patients have burns of less than 10% of TSBA and 90% of patients involve less than 20% of TSBA associated with most frequent site of body parts affected by burns: arms, head and neck; legs are associated with deep partial thickness and full partial thickness “second and third degree of burn injury”<sup>(15)</sup>.

The table reveals (82.5%) of patients admitted do not have past medical history only 7 patients (17.5%) with chronic health problem D.M and (77.5%) of patients admitted do not have past surgical history; only 9 female patients have past surgical intervention S.C. The researcher has found both PMH and PSH affected on progress of wound healing especially for patients with D.M which main cause to delay wound healing and main factor that caused wound infection and tissue necrosis, where as the patients who have PSH are the main cause to developed scar formation at surgical site.

More than half of patients get wound intervention at the time of burn occur (55%) in which they get cooling as a type of intervention (42.5%). This agrees with A Wound International publication document (2014) cooling of thermal burn wound with tepid running water that helps to remove heat and prevent progression of a thermal burn injury and minimize tissue damage, It also can decrease pain level, clean the wound and minimize wound swelling. This process is performed within 20 minutes of the burn occurring and should continued for more than 30 minutes<sup>(15)</sup>.

The table shows that most of the patients are referred to an emergency department (95%) before being admitted to burn center; this agrees with Kennedy (2005) who reviewed the management of problems encountered in more than half of patients who were received in emergency care after triage in various Australian hospitals<sup>(16)</sup>.

**Table 3:** comparison between contemporary and conventional dressing with respect to score of pain indicates contemporary burn dressing (Acticoat) which reduce pain level during dressing change with percentage (70%), while conventional burns dressing has severe pain with percentage (55%) measured by Numerical Rating Scale rang from (0-10). The finding indicates there is a high significant difference in comparing between contemporary and conventional burn dressing , this agree with Opananon (2010) that sliver-impregnated dressing (Acticoat) reduce pain level compared to SSD because the number of wound dressing change in the Acticoat treated group is significantly lower than group of SSD<sup>(17)</sup>.

**Table 4:** discusses the comparison between Acticoat dressing and SSD dressing with respect of time required to heal, number of dressing changes, time of interval dressing, and time to resolve all signs of infection. More than half of patients required 10- 11 days (55%) to complete healing; third of patients required 12-13 days (30%) to complete healing for patients treated with Acticoat dressing, whereas five patients treated with SSD required 26-30 days (25%) and nine patients are equally distributed required days ranging from 16- 25 days

(45%). Healing was earlier in the Acticoat group but there is no statistical significance in the difference found in the mean of sample Acticoat group (3.54) and SSD group (5.45). This agrees with Li et al (2006); the average for time required to heal is (12+/-5) days after application of Acticoat burn dressing which was significantly shorter than application of SSD which was (16+/-6) days. The total effective rate of the wounds treated with Acticoat dressing was (97.05%) which higher than that wounds treated with SSD which was (94.17%) but there was no statistically significant difference<sup>(18)</sup>.

Regarding the number of dressing changes, all patients treated with Acticoat dressing required 3-4 times (100%) compare to patients treated with SSD. More than half of patients (60%) required 21 times to change dressing. However, the time of intervals dressing change of the Acticoat dressing need to be change once time every 3-4 days (100%), where as SSD needs daily change (100%). The findings indicates that there is highly significant comparison between Acticoat and SSD at p value (p=0.001). This agrees with Huang et al (2007) who studied a randomized comparative trial between Acticoat and SSD. The Acticoat dressing change 1 time every 3 days while SSD change daily<sup>(19)</sup>.

The table discusses the time needed to resolve all signs of infection. More than half patients (70%) treated with Acticoat dressing do not have wound infection during hospitalization and dressing change is only (30 %) of patients who needed 2-4 days to resolve their signs of infection, while (40%) of patients treated with SSD need 5-7 days to resolve signs of infection. The findings indicated that there is high significant comparison between Acticoat and SSD at (p- value= 0.003). This agrees with Li et al (2006), the infection control rate of the Acticoat group was 6 days (21.7%) Post treatment and 12 days (43.5%) of SSD group post treatment<sup>(18)</sup>.

**Table 5:** discusses the final complications of burns wound, the table shows that more than half of patients (60%) have developed hypertrophic scar, half of patients (50%) have developed hypo pigmentation and third of them (45%) have developed hyper pigmentation after using SSD. Patients who have used Acticoat dressing tend to be normal (70%); only (30%) of them have developed a hyper atrophic scar, half of patients get normal pigmentation (50%), (30%) of them have developed hypo pigmentation and only (20%) of them have developed hyper pigmentation after using of Acticoat dressing. The finding indicates there is a high significant difference between Acticoat and SSD. This agree with Childress (2007) patients with acute burn wound who have developed less wound complications when Acticoat is used and it increase rates of wound healing; Acticoat is widely reviewed in burn area with studies showing a decrease in burn wound complication versus SSD<sup>(20)</sup>.

## V. Conclusion

Based on the interpretation and discussion of the study findings, the study can conclude that:

1. The females of the sample study are more than males.
2. The duration of hospitalization for patients treated with Acticoat dressing was 11days; the highest percentage (47.5%). Patients treated with SSD duration of hospitalization was 22 days (30%).
3. The severity of pain level was severe pain with patients have used conventional dressing while moderate pain with patients have used contemporary dressing.
4. The healing rate was faster with contemporary dressing than conventional dressing.
5. The number of dressing change was one times every 4 days with patients have used contemporary dressing while patients with conventional dressing need to change dressing daily.
6. The time need to resolve all signs of infection was 4-7 days with patients used conventional dressing while patients used contemporary dressing have not infected wound
7. The patients have used contemporary dressing tend to be normal condition while patients with conventional dressing developed hyperatrophic scar.
8. The contemporary dressing was cheep (financial burdens) than conventional dressing
9. The patients used contemporary dressings tend to be independent to do ADL during discharge assessment while patients with conventional dressing were dependent to other.
10. There is no relationship between age, gender, with process of wound healing.

## VI. Recommendations

Based on the early stated conclusion, the present study can recommend that:

1. Establishment of awareness sessions on how to deal with fires in agreement with the Directorate of Civil Defense, especially that most incidence of burn take place at home and emphasis on the provision of fire extinguishers and how to evacuate the injured people .
2. Emphasis on the need to provide modern burn dressing and introduce the recent techniques that used in the treatment and management of burns wound to decrease the mortality rates and arising complications from burns wound.

3. Further studies include large samples involving other Burn Center and burn wards at various governmental hospitals to assess medical and nursing care provided to burn patients and to acquaint the means that used to treat and manage patients with burns injury.
4. Further studies to provide clinical information concerning factors that influence wound healing, complications produced by burn injury, cost effectiveness, nursing time, and generic measure of psychological and social functions that are related to the patient's life style.

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