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BEAT THE BURN – THE TRADITIONAL SIDDHA WAY

V.Nivedhitha[1], G.Micheal Nitha[1], R.Prakathi[1], Thomas M.Walter[2]

[1]Third year, BSMS, Government Siddha Medical College, Palayamkottai, Tirunelveli.

nivedhithavadivelu@gmail.com

[2]Lecturer, Government Siddha Medical College, Palayamkottai, Tirunelveli.

ABSTRACT

The Siddha system of medicine, the eldest sibling of all medicine systems has many wonderful and unbelievable curative effects in many diseases. Despite the wrong belief that Siddha line of treatment has no emergency care, this work adds credibility to the emergency management in Siddha which is quoted as ***"Rana vaithiyam"*** in Siddha system. This work paves the way for treatment of burn injuries. Fire injury is one of the leading causes of both morbidity and mortality by unintentional injury. Each year more than 3 lakh people die from fire related burn injuries and millions of people suffer from burn related disabilities and disfigurements. In India, over 10 lakh people are moderately or severely burnt every year. So the demand for treatment of burn injury is at its utmost level. This work aims for the treatment in Siddha line, with many remedies. It includes the medicinal preparations for burn wound, promotion of original colour of the skin after injury and to get rid of the scars produced.

KEYWORDS

Burns, Scalds, Complications of burns, Siddha medicine, *Theeppun*.

INTRODUCTION

The use of fire is almost indispensible for our life for various purposes. The leading cause of burn injury in home is mainly due to cooking equipments. However, most fire related deaths are from residential fires ignited by smoking materials. Although, burn injuries are preventable, injury occurs often accidentally, which is a part of human nature. The Siddha

line of medicine provides vast solutions for burns and scalds. Considered as one of the legends among the siddhars, *Agathiyar* has formulated many medicines for burns.

BURNS AND SCALDS

Burn is the injury to the skin or other tissues caused by heat mostly from fire and also by electricity and chemicals. Burn injury due to fire is predominant.

Scald is a form of thermal burn resulted from heated fluids such as boiling water or steam.

It is classified into the following types based on their levels of potentiality to cause damage.

- First degree burn injury
- Second degree burn injury
- Third degree burn injury
- Fourth degree burn injury

Types	Layers involved	Appearance	Sensation	Prognosis
Superficial (first degree)	Epidermis	Dry, red without blisters	Painful	Heals well.
Superficial partial thickness (second degree)	Extends into the papillary dermis	Moist, redness with clear blisters. Blanches with pressure.	Very painful	Local infection (cellulitis) but no scarring typically
Deep partial thickness (second degree)	Extends into reticular dermis	Fairly dry. Yellow or white. Less blanching. May be blistering.	Pressure and discomfort.	Scarring, contractures
Full thickness(third degree)	Extends through entire dermis	Leathery. Stiff and white/brown. No blanching	Painless	Scarring, contractures, amputation.
Fourth degree	Extends through entire skin and into underlying fat, muscle and bone	Dry, black charred with eschar	Painless	Amputation, significant functional impairment and may lead to death.

SIGNS AND SYMPTOMS

The characteristics of a burn depend upon its depth and total body surface area affected. Burn injury causes loss in plasma level due to inflammation which causes increased

concentration of blood. Some worrisome signs in severe stages include shortness of breath, hoarseness, and wheezing or stridor.

Burns may produce emotional and psychological distress.

In some cases, septicaemia may occur due to infection of burned site. The symptoms are fever, breathing difficulty, low pressure, high heart rate, mental confusion, chills, dizziness, fatigue, fever, and skin discolouration, altered level of consciousness or mental confusion.

THE WALLACE RULE OF NINES

It is a tool used to estimate the Total Body Surface Area (TBSA) affected by a burn.

Body part affected	Estimated body surface area	
	Adults	children
Entire left arm	9%	9%
Entire right arm	9%	9%
Entire head	9%	9%
Entire chest	9%	9%
Entire abdomen	9%	9%
Entire back	18%	18%
Entire left leg	18%	13.5%
Entire right leg	18%	13.5%
Groin	1%	1%

PREDICTION OF MORTALITY

Baux score

It is used to predict the chance of mortality due to severe burns. This score is the addition of two factors, the first being the total body surface area affected by burning and the second being the age of the patient.

Baux score= percent of body surface burnt + patient's age

This score is a comparative indicator of burn severity, with a score over 140 considered as being unsurvivable, depending on the available treatment resources.

SIDDHA CONCEPT OF BURNS (*THEEPPUN*)

Theeppun is of two types

- *Suttappun* - caused by fire
- *Vendha pun* – caused by hot liquids

Burn injury (*Theeppun)* first develops blisters and then it breaks and the liquid oozes out causing heat and burning sensation. Sometimes due to high degree of fire, muscles and bones are damaged. Skin peels off and wound forms. Following wound healing, the skin appears whitish.

ABIKAADHA SURAM

Abikaadha suram, a type of fever described in siddha medicine can be compared with fever caused secondary to burn injury.

Abikaadha suram is caused due to burn injury and fallen injury. It causes abrupt increase of *vaayu* which causes damage to blood followed by body weakness, swelling and colour change.

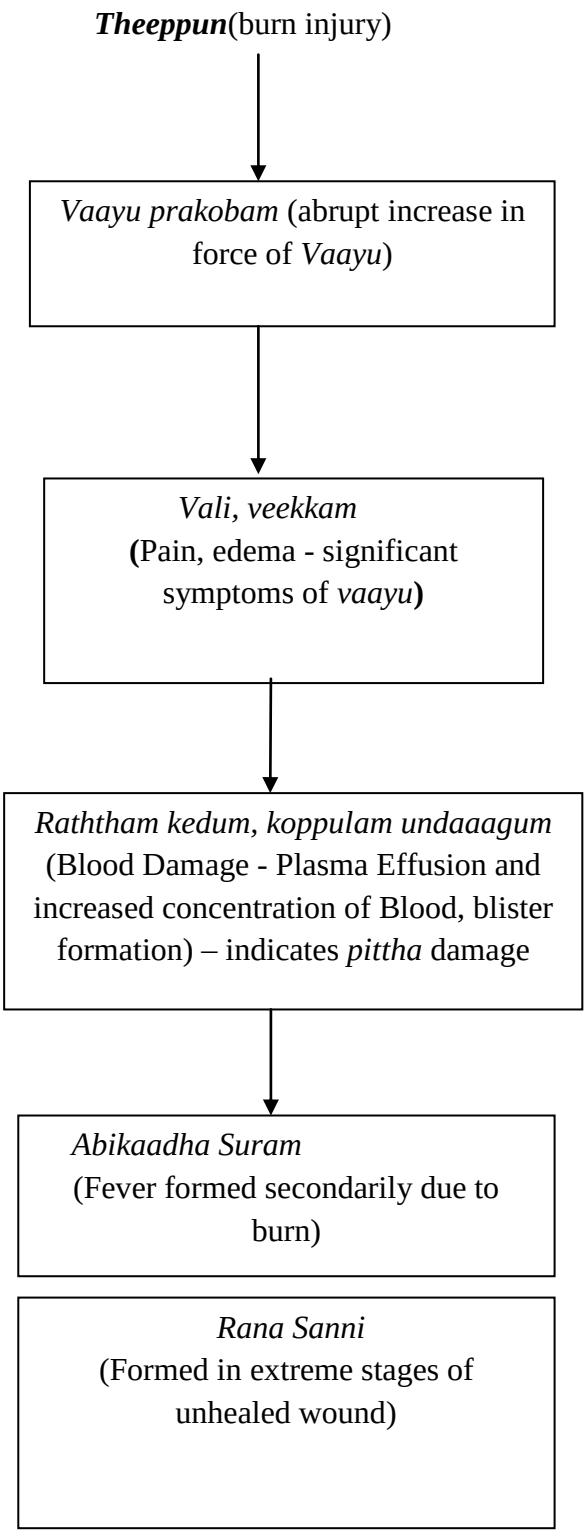
RANA SANNI SURAM

Rana sanni suram caused in severe stages of unhealed wounds can be compared with septicaemic infection in burns.

It is caused due to wound accompanied by pain, which doesn't heal on medication. It forms pus and suppuration and results in *sanni suram*.

Manifestations of burn injury	**Burn injury in siddha concept**
Burns develop blisters	*Theeppun koppulamaaga* (blister) *ezhum*
Peeling of skin	*Thol vazhalum* (peeling)
Total loss of colour	*Punn aariya idam vellai velerendru* (colour loss) *irukum*
Skin, fat, muscle and bone are affected in fourth degree injury	*Adheedha theeyil thol, sadhai, enbu* (skin, muscle, bone) *baadhikkum*(damage)
Plasma effusion and increased of blood	*Raththam kedum* (blood damage)
Fever occurs in all burn injuries	*Theeppun abikaadha suram* (fever) *pirappikkum*
Septicemic infection occurs in later stage	*Theevira nilaiyil rana sanni suram undaagum* (may be compared with septicaemia in severe stage)

The consequent events taking place in burn injury are as follows



SINGLE DRUG MEDICINES

HERBAL MEDICINES

S. no	Botanical name and family	Siddha name, vernacular name, part used	Active principles	Uses in siddha	Scientific evidence
1	Oryza sativa Poaceae	*Arisi* Rice Seed	Inositol, myo-inositol	Burns and scalds, ulcers, eczema	Kim.Z et all,2018 [30]
2	Indigofera tinctoria Fabaceae	*Avuri* True indigo leaves	Indigotin, apigenin	Burns and scalds, antidote, joint pain, jaundice.	---
3	Mangifera indica Anacardiaceae	*Maa* Mango Leaves	Mangiferin, urushiols	Burns, hiccups, throat problems.	Jose Jurel M Nuevo et all, 2013[29]
4	Gossypium herbaceum Malvaceae	*Paruththi* Levant cotton Flowers, cotton	Pinene, gossypol, caryophyllene	Burns and scalds, epistaxis.	---
5	Trigonella foenum-graecum Fabaceae	*Vendhayam* Fenugreek Leaves	Beta-carotene, tryptophan, lysine, trygonellin	Burns, piles, hip pain.	Badri Prakash Nagori et all,2011[27]
6	Acalypha indica Euphorbiaceae	*Kuppaimeni* Indian acalypha Leaves	Acalyphin,beta-sitosterol, acalyphamide	Burns, scabies, constipation.	D Kumarasamyraja et all, 2015[35]
7	Saccharum officinarum Poaceae	*Karumbu* Sugarcane Stem	Policosanols, phenolic acids	Burns, hiccups, burning sensation	---
8	Sesamum indicum Pedaliaceae	*Ell* Sesame Seed	Sesamolin, sesamin, pinoresinol	Burns and scalds, bleeding piles, emmenagogue.	Kiran et all, 2008[32]
9	Cocos nucifera Arecaceae	*Thennai Coconut Endosperm*	Mannitol, sorbitol, cytokinin	Burns, scabies.	Pallavi Srivastava et all, 2008[28]
10	Musa paradisiaca Musaceae	*Vaazhai* Banana Leaves	Cellulose, pectin, lignin	Burns and scalds, wound dressing.	Amutha K et all, 2016[37]
11	Piper betle Piperaceae	*Vettrilai* Betal Leaves	Thiamine, calcium, potassium	Burns, indigestion, sinusitis.	Santhanam G et all, 1990[34]
12	Aloe vera Asphodelaceae	*Kattralai* Aloe Leaves	Aloin, aloe emodin,dimethyl sulfoxide	Burns, splenomegaly, dysentery.	Davis RH et all, 1994[33]
13	Lawsonia alba Lythraceae	*Azhavanam, marudhondri* Henna Leaves	Lawsone, anthroquinone, gallic acid	Burns and scalds, knee joint pain, burning sensation.	K.S.Patil et all, 2003[38]

ANIMAL SOURCES

s.no	Zoological name	Tamil name and form used	Actions	Uses in siddha
1	Selachimorpha	*Sura* Oil	Anti vadha, galactagogue	Burns and scalds, nutritive, primary complex.
2	Bos Taurus	*Pasu* Ghee, butter	Tonic, demulcent, alterative	Burns, vomit, ulcer.
3	Honey	*Thaen*	Demulcent, astringent, expectorant	Burns and scalds, indigestion.
4	Sus scrofa domesticus	*Pandri* Fat	Demulcent, laxative, emollient	Burns, skin disease, rectal prolapsed.

METALS AND MINERAL SOURCES

S.no	Chemical name	Tamil name	Actions
1	Zinc oxide	*Thutha naaga uyiragam*	Astringent, styptic, alternative.
2	Calcium carbonate	*Karsunnambu*	Alterative, astringent, sedative.
3	Ferric oxide	*Irumbu aakside*	Hematinic, tonic, stomachic.

MULTI DRUG PREPARATIONS

s. no	Main constituents Botanical name and family	Tamil name and parts used	Active principles	Uses in siddha
1	• Prosopis juliflora – Fabaceae	*Karuvel* –resin	Glutelin, phytic acid	Burns, leucorrhoea, burning micturition, cough.
	• Egg	*Muttai*	Ovalbumin, ovamucoid, ovamucin	Tonic, antidote.
2	• Sesamum indicum - Pedaliaceae	*Ell* –seed	Sesamolin, sesamin, lariciresinol	Burns and scalds, bleeding piles, emmenagogue.
	• Egg	*Muttai*	Ovalbumin, ovamucin, ovamucoid.	Tonic, antidote.
3	• Gossypium indicum – Malvaceae	*Paruththi* –seeds	Gossypol, pipene	Expectorant, laxative.
	• Zingiber officinale – Zingiberaceae	*Inji* –undergound stem	Gingerols, zingibain, bisabolene	Nausea, vomit, cough.

4	• Terminalia chebula – Combretaceae	*Kadukkaai* –fruit	Chebulic acid, chebulinic acid, chebulagic acid.	Piles, anaemia, cough.
	• Linum usitatisimum – Linaceace	*Alisi* –seed	Palmitic acid, lignin, oleic acid	Burns and scalds, leucorrhoea, cough
5	*Kungiliya vennai*: • Shorea robusta – Dipterocarpaceae • Sesamum indicum – Pedaliaceae	•*Vellai kungiliyam* •*Ell* –seed	• Asiatic acid, triterpenic acid, tannic acid • Sesamin, sesamolin, lariciresinol	• Burns, leucorrhoea, diarrhoea. • Burns and scalds, bleeding piles, emmenagogue.
6	*Arugan thailam:* • Cynodon dactylon -Poaceae • Glycyrrhiza glabra -Fabaceae	• *Arugu* –grass • *Adhimadhuram*	• Beta sitosterol, beta carotene • Glycyrrhizin, glycrrhizinic acid	• Scabies, leucorrhoea • Jaundice, diarrhoea, dry cough
7	*Manjishthadya ghrita*: • Rubia cordifolia - Rubiaceae • Santalum album - Santalaceae	• *Manjitti* • *sandhanam*	• rubiadin, cordiofodiol • alpha santol, beta santol, santene	• burns, pimples • Leucorrhoea, thirst, fever

AGATHIYAR FORMULATIONS

s.no	Name	Main constituents Botanical name and family	Tamil name	Active principles	Other uses in Siddha
1	*Dhuruvaadhinei*	• Enicostemma axillare – Gerdianaceae	• *Vellarugu*	• Gentianine, betulin	• Itching, leucorrhoea.
		• Nymphea nouchali – Nymphaceae	• *Alli*	• Nymphalin, myricitrin.	• Diabetes mellitus, washing wounds.
		• Nelumbo nucifera – Nelumbonacae	• *Thaamarai*	• Kaempferol, quercetin	• Aphrodisiac, tonic, fever.

2	*Kulirndha neer*	• Curcuma longa – Zingiberaceae • Acorus calamus - Acoraceae	• *Manjal* • *Vasambu*	• Curcumin, curcuminoid • Quinone, triterpine	• Scabies cough, vomit. • Fever, scabies, indigestion.
3	*Thee sutta punnukku kalimbu*	• Shorea robusta – Dipterocarpaceae • Lead sulphide	• *Vellai kungiliyam* • *Mirudharsingi*	• Asiatic acid, triterpenenic acid, tannic acid. • Lead	• Burns, leucorrhoea, diarrhoea. • Coolant, antihelminthic, eczema.

Blister prevention

Instantly on exposure to fire injury, the leaves of Aloe vera are used to prevent the formation of blisters.

Honey is also used for blister prevention.

Prevention of infection

Gun cotton and collodion obtained from *Gosssypium herbaceum* is used for prevention of infection and it also promotes rapid wound healing.

Recovery of original colour

The decoction obtained from bark of *Azadirachta indica* is used to recover the original colour of skin after wound healing.

Getting rid of scars

Scar formed due to burn wound is healed using the medicine obtained from the tusk of elephant.

Conclusion

Considering this as one of the primary works, many more steps should be taken on clinical and laboratory trials on burn injuries and other injuries in siddha aspect, based on the

ideas of *''Rana vaithiyam*". If extensive works are done in *Rana vaithiyam*, there is no doubt that siddha system of medicine will provide a world with better emergency treatments.

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