



## AN INDIGENOUS TOPICAL FORMULATION FOR BURN CASES

## Surgery

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## KEYWORDS

## INTRODUCTION

- Infection in burn case is a common medical problem leading to high mortality and morbidity.
- Many topical applications have been used, some with good results even in resistance infections. Some of these are silver sulfadiazine or silver sulfetamide(2%), sulfamylon or mephanide acetate(10%), silver nitrate(.5%), framycetin sulfate(1%) etc.
- Our Ancients and Vaidyas were using camphor as an ingredients for "Loban" and skin preparations for use over burns and other injuries. Camphor has been in use as a preservative since time immortal. Camphor was also the main ingredient of a preparation which kept Egyptian mummies intact through ages. Camphor was formerly used intramuscularly as a reflex respiratory stimulant; but, it is now employed exclusively for its local action. It is a rubefacient when rubbed on the skin; when not rubbed vigorously, it produces a feeling of cold. It also has a mild C.N.S. stimulant action and a mild anaesthetic action.
- In our institutes, a trial of camphor in coconut oil was initially started in case of burns of less than 20%, slowly, it was extended to a full scale treatment.
- The present communication deals with our experience in 156 cases with an appraisal and evaluation of the results of the treatment with camphor in coconut oil.

## AIM AND OBJECTIVE

The aim of the study was to carry out an observational study and evaluation of the results of treatment with camphor in coconut oil.

## MATERIAL AND METHODS

## MATERIAL

The present work comprises observation on 156 Burn patients who have come to RIMS, Ranchi in emergency of surgery department.

## METHODS

**Study design-** Prospective observational study

**Place-** Rajendra Institute of Medical Sciences, Ranchi

**Duration-** 2009-2019

**Inclusion criteria-** Patient with scald/flame/electric burn coming to RIMS Ranchi.

**Exclusion criteria-** Patients with previous other comorbidities or Patients on medications which likely to cause immunosuppression. Children less than 5 years of age to avoid any known toxicity of camphor.

## Preparation Of The Application:

Commercially available camphor is crushed and powdered, is then mixed with freshly expressed pure coconut oil in proportion of 10gm of camphor to 100 ml of coconut oil. The mixture is well shaken in a clean sterile bottle for about 10 minutes till a transparent solution is formed.

## Method Of Application:

It can be applied with cotton wool swab on a stick, after proper wound cleaning with a normal saline solution. The wounds are properly bandaged. The bandages are changed next day. Then onwards the solution is applied all over the burnt surface. The burnt

surfaces are kept constantly wet with solution. It is important to keep the burn surface always moist with the solution(3-4 application per day). Camphor being volatile in nature evaporates leaving the surface dry and unprotected. After drying of the surface a fresh application of the solution for a few causes mild burning sensation for a few minutes. This frequent soaking of the burn area with the solution can be done by the patient or any attendant/relatives. In cases of burn of body surface area (BSA) more than 50%, Silver Sulfadiazine is first applied for a period of 3 days and then from the 4th day onwards, camphor solution is applied.

## OBSERVATION AND DISCUSSION

Since 2009, 156 cases of varying degrees of burns have been treated at this tertiary level hospital using camphor in coconut oil(10%). The age distribution of these patients in relation to percentage burn area is presented in table 1.

Maximum number of patients was in the 20-30 year age group with 30-40% burn surface. There were only 31 cases with more than 50% burn surface.

**Table -1 Age Distribution Of 156 Patients In Relation To Their Pe Percentage Burn Area**

Age Group (year)	Total nom of cases	BSA <20%	BSA 20-30%	BSA 30-40%	BSA 40-50%	BSA 50-60%	BSA 60-70%	BSA >70%
1-5	0	0	-	-	-	-	-	-
5-10	9	1	5	3	-	-	-	-
10-15	8	1	2	5	-	-	-	-
15-20	8	-	3	4	1	-	-	-
20-30	76	2	8	28	22	11	3	2
30-40	36	1	3	14	4	7	3	4
40-50	15	-	6	7	1	1	-	-
50-60	3	-	1	2	-	-	-	-
>60	1	-	-	1	-	-	-	-
Total	156							

Table 2 shows the month wise admission of the patients along with the number of deaths while under treatment. Septicaemia was the cause of death in 8 patients only. 22 other patients died due to cause other than septicaemia. 6 of these died within 12 hours, 8 within 36 hours and the rest 8 died by the end of 5th day.

**Table -2 Year Wise Admission And Mortality**

Year of admission	No.of admission	Septic mortality	Mortality due to other causes	Total mortality
2009	12	0	1	1
2010	15	2	1	3
2011	12	0	3	3
2012	9	0	0	0
2013	13	2	2	4
2014	10	0	1	1
2015	16	1	1	2
2016	14	1	1	2
2017	15	0	1	1
2018	21	0	4	4
2019	19	1	3	4

Table 3 shows the interrelation between the percentage burns, type of burns and number of burns. Out of total 30 deaths, 18 had 50% or more body surface (mortality rate 60%).

**Table- 3 Correlation Of Percentage Of Burn With Type Of Burn And Mortality**

Body Surface Area of burn	Total No.of death	Type of burn in these
Less than20%	Nil	--
20%-30%	1	Deep burn of face, trunk
30%-40%	2	Deep burn of perineum and rest superficial
40%-50%	9	In four, mostly superficial; rest, mostly deep burn
50%-60%	6	Mostly superficial
More than 60%	12	Mostly superficial in four; in rest, deep burn of abdomen and thigh along with superficial burn

The problem of foul smell which seems to ooze out from the ward where burn patients were kept was completely abolished. Instead a sweet odour of camphor permeated the air. The life of patients, nursing staff and attending doctors became easier and comfortable. Wound healing was good and the average hospital stay was about 3 weeks. The formulation is cheaper than any other preparation.

The inference drawn above is not a critical appraisal or any comparative, side by side of this formulation with other available formulations. The inference about mortality or morbidity in burn patients is based purely on clinical experience trained at this institution. The treating doctors had compared clinically the results of this formulation with those of other preparations being used in other units or in other places of Jharkhand state in similar surroundings. No obvious toxicity observed in any patient in our series.

#### SUMMARY

A new topical formulation containing 10% camphor in coconut oil is used as an application over the burn areas. The formulation is easily available and cheap. Application of camphor to the skin has been known to improve blood circulation and so healing. It improves the mortality and morbidity of burn patients. Hospitalization is smooth and septicemia is brought down considerably. Best thing is problem of foul smell is completely eradicated.

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