

Comparison of Empirical Treatment Versus Advanced Medical Care in Treatment of Burns of Domestic Violence

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ABSTRACT

Background: Fires and burns incidence are on constant rise. Efforts had been made since very ancient times to curb such debilitating injuries resulting from domestic violence, vitriol incidences, accidents and mishaps. Treating the burns always had been an intricate matter of concern. Since primitive times the treatment modalities had been changed over and over in the search of best available options.

Aim: To compare the efficacy of empirical treatment with that of advanced medical care among the victims of burns.

Methods: The study comprised of 300 cases of burns presented from January to December 2020 in Accidents and Emergency Department of the Jannah Hospital Lahore for empirical treatment and those managed in the Burn Center of Jannah Hospital Lahore for advanced medical care of burns. Those who have been referred from periphery and could not get advanced medical care or had their wound healed when brought to above set-up were considered as treated as empirically managed burn victims.

Results: The comparative analysis of empirical therapy and advanced medical care revealed significant difference when observed among the literacy level and medium of burns with 0.000 value of p. While no significance difference was observed when analysis was carried out for age and gender with a p value of 0.187 and 0.496 respectively.

Keywords: Empirical, Advanced Medical Care, Burns, Age, Gender, Literacy level, Medium of Burns

INTRODUCTION

The life in an ecosystem is incomplete without fire being involved into it one way or the other. In order to thrive in the life it needs to be in temperate climate that means being around the fire on one hand and is always at risk for its exposure to burns on the other hand.¹ Treating wounds due to burns have been drastically changed with passage of the time and advancement in technology of medical care. The impact of such a treatment has been noticed with profound implications in course of healing of such wounds.² The rationale of the pathophysiology of the wounds due to burns though remained the same but the art of healing due to advancement in medical care improved beyond measures.³ Pakistan is among the lower income countries in the world and level of medical care has not much changed when it comes to the level primary and secondary healthcare institutions and yet the establishment of burn centers has come into existence in last few years.⁴

The study emphasized on the fact that the unfortunate victims of burns treated in those primary and secondary level of healthcare with facilities not beyond of the empirical or conventional level of medical care.⁵ The treatment at such a center focused on empirical standards of fluid therapy, symptomatic treatment and primary surgical measures only⁶. To the maximum it included intubation, tracheostomy, analgesia, tetanus prophylaxis and antimicrobial or antibiotic therapy.⁷ On the other hand advanced medical care included recent techniques specialized in treating the wounds of burns. It included the investigations regarding the factors of severity like protein C, estimation of the superiority of the natural colloids to that of the empirical crystalloids, imaging techniques to focus on microscopic details, stem cell therapy, adjuncts of healing for topical therapy in terms of negative pressure⁸ and search for substitutes of skin etc^{2,9}. Such advanced medical care is now rendered quite an equitable to state of the art measures for treating the burns in certain centers of Pakistan especially designed for such a purpose. Now such an advance medical is delivered in tertiary level of healthcare facilities in Pakistan^{10,11}.

The study participants included all age groups presenting in emergency mostly of which were children followed by elders¹². The gender predilections were mostly females but with a slight differences of just 10%¹³. The literacy level was stratified into illiterates which definitely included the pre-school going age groups which were in wide majority. The rest of the strata included with those with primary school education, secondary school certification, higher secondary school certification and graduate class^{12,13}. Besides that type of burns was studied in all the participants. Types of burns that were studied included all types of liquid medium burns i.e. scalds, those which were originated from any sort of flames were termed as dry burns, electrical and any kind of corrosives, acids, alkalies or likewise source were included in chemical burns.¹⁴

MATERIAL AND METHODS

The study participants were among the case of burns brought to the accidents and emergency department of burn center of Jinnah Hospital Lahore from January 2018 to September 2018. All the 300 cases presenting at the study settings were included in the sample population during the era mentioned above under descriptive cross-sectional study analysis.

We carried out descriptive analysis to determine proportions and means of statistical significance and associations with risk factors whereas a p value of less than 0.05 was taken as to be considered significant with a confidence interval of 95%.

RESULTS

Frequency Distribution of Age: The study included all age groups from birth to old age. The different ages were placed into pediatric, adolescents, adults and elder age groups (Table 1) as shown in table 1.

As shown in the table above the pediatric age group contained 55% of the burn cases, adolescents and adults contributed 1.3% and 15% respectively while geriatrics made 28.7% of the total population. Therefore the maximum percentages were from pediatric and geriatric age groups.

As shown in table 2 by difference of 14% the females were in majority making 57% and male with 43% of the total sample size.

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Comparison of Empirical versus Advanced Medical Care amongst the Patients of Burns:

The study focus was to draw the significance of comparison of empirical treatment against the advanced medical care. We conducted the study on all age groups, both the genders, their level of literacy and types of burns the sample of the patients presented with. The details and percentage of presentation is mentioned as below.

Out of total 300 patients of burns 63 patients making 21% of the sample size were managed with empirical treatment as discussed above and 237 patients of burns making the share of 79% of the entire population under study were managed with advanced medical care especially oriented for patients of burns. The results were analyzed and shown in table 3.

Among the 63 patients of burns who were managed empirically for burns treatment included 31 pediatric age groups patients and 16 geriatric age group patients making the maximum number of patients in this category. Besides them, there were just 3 adolescents and 13 elders age group patients. The patients who were managed with advance medical care included 134 pediatric, 70 geriatric, 32 elders and just 1 adolescents.

There was statistically no significant relationship in empirical versus advanced medical care among the patients of burns when it was analyzed for different age groups. Here the p value was found to be 0.187 and hence is way more than 0.05 significant value of p. The analysis of the gender for empirical versus specialized medical care comparison was also found to be grossly insignificant with P value 0.496.

The literacy level of the burn patients was analyzed to found any significance of the advanced medical care to compare it with empirically treatment. The man categories were made into illiterates, primary school education, secondary school certificate and higher secondary school certificate and graduate level of education. There were 147 illiterates among which among which 120 were able to get advanced medical care for burns and rest 27 were treated empirically. Similarly out of 94 primary school education patients of burns 71 were managed with advanced medical care and 23 were treated empirically for their burns. For a total of 22 secondary school certificate holders with burns 10 were treated empirically and 12 were managed with advanced medical care. For about a total of 23 burn patients of higher secondary

school certified education 22 were managed with advanced medical care and just 1 got empirically managed therapy for burns. Finally out of 14 graduate patients of burns 12 were able to have advanced medical care for their burns while just 2 were treated with empirical management for burns. A strong comparative analysis was observed with a p value of 0.029 showing the advanced medical care was way more convincing and better than empirical management of burns.

For medium of burns there was also a grossly significant comparison was observed with a p value of 0.000 predicting that advanced medical care has for better results in terms of managing the patients of burns as compared to empirical burns management. All patients of burns in this study were categorized into four types of medium of burns as Scalds, Dry flame burns, Electrical burs and Chemical burns having 159 patients of scalds, 111 patients of dry, 21 patients of electrical and only 9 patients of electrical burns respectively.

Out of 159 scalds 136 were that of advanced medical care and 23 managed empirically while for dry flame burns there were 84 burn patient having advanced medical care and 27 having empirical burn management making a total of 111 cases of scalds. Among 21 electrical burns 9 managed with advanced medical care and 12 with empirically therapy for burns. The final category of chemical burns there were total 9 patients in which just 1 was managed with empirical therapy and rest all were managed with advanced medical care

Table 1: Frequency Distribution of Age

Age Group	Frequency	Percent
Pediatrics	165	55
Adolescents	4	1.3
Adults	45	15
Geriatrics	86	28.7
Total	300	100.0

Table 2: Frequency Distribution of Gender

Gender	Frequency	Percent
Male	129	43
Female	171	57

Table 3: Comparison of Empirical Treatment versus Advanced Medical Care amongst the Patients of Burns

Risk Factors	Empirical Treatment (n=63)	Advanced Medical Care (n=237)	Total (n=300)	p value
Age				
Pediatrics	31	134	165	0.187
Adolescents	3	1	4	
Adults	13	32	45	
Elders	16	70	86	
Gender				
Male	28	101	129	0.496
Female	35	136	171	
Literacy Level				
Illiterate	27	120	147	0.029
Primary	23	71	94	
Secondary	10	12	22	
Higher Secondary	1	22	23	
Graduate	2	12	14	
Medium of Burn				
Scalds	23	136	159	0.000
Dry	27	84	111	
Electricity	12	9	21	
Chemical	1	8	9	

DISCUSSION

The study revealed that for the treatment of burns the ideal choice should be advanced medical care as empirical therapy has very poor results. It is most definitely not the choice but a compulsion to go for empirical management but healthcare service providers and government should seriously look into the matter. A strongly positive comparison was observed in terms of patient recovery,

would healing, halting complications and reducing hospital stay in advanced medical care as compared to that of empirical management of burns.

A p value of 0.000 was observed in the comparative analysis of advanced medical care and empirical management of burns when the same was analyzed for different medium of burns including scalds, dry flame, electrical and chemical burns. A statistically very significant comparison was seen showing that

advanced medical care is way better and superior than empirical therapy where the choice of either is available. The study finding are consistent with a variety of the researchers and authors while there is not study found contradictory to this^{2,6}.

Relatively a significant comparison was observed for advanced medical care being superior, better, effective and worth availing where choice is available as opposed to that of empirical therapy for burns when literacy level was analyzed. A relatively significant p value of 0.029 was observed showing that advanced medical care has promising results when the same was compared with empirically management in illiterate and educated population. The study findings are consistent with many researcher finding and not a single research publication is against such findings^{2,3,6-9}.

A statistically insignificant results were observed when age and gender were analyzed for comparison of advanced medical care and empirically management of patients of burns. A p value of 0.187 for analysis of age and 0.496 for analysis of gender was observed for comparison of the two types of management of burn patients¹⁵.

CONCLUSION

Our study conclusively is in the favor of the fact that advanced medical care is significantly promising and convincing for better outcome of the patients of burns. The different medium of buns when managed in tertiary care set up with in-built burn units and those without advanced medical care burn facility showed grossly significant results^{3,7,9}.

Similarly the level of literacy play a pivotal role with results showing those aware of the fact and choosing the advanced medical care were treated better, faster and with reasonable economy and those being unaware of the fact due to illiteracy or for some other reason faced bad consequences in terms of complications, long hospital stay and repeated visits^{2,9}.

Conflict of interest: Nil

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