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Management of burn in poor equipped hospital

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ABSTRACT:

This is prospective study conducted in department of surgery in Al Nasyria general hospital The aim of study is attempt to reduce morbidity and mortality rate in patients who suffering from burn injuries 116 patients admitted in the burn unit in Al Nasyria hospital who suffering from moderate burn (between 20 - 50 % of TBSA) 23 patients (20%) were died(group A) patients who admit hospital for less than 72 hours for resustation then go home and follow them as out patient , While (group B) complete there management and follow up at hospital until they be well or die , I find the mortality rate in group A (11%) is less than group B (27%) in spit of they managed at hospital and under supervision of senior ,

The most age group suffering from burn injury is under 10 years 59 patients among 116 patients (about 50%) but subgroup (who under 2years) poorly resistance to burn complications 10 among 21 patients (about 48%) of them died during few days of admission in hospital While subgroup (3- 10 years) have good resistance to complications (only 2 patients of 38 patients about 4.5%)are diedthat both sexes are equally suffering from burn injury but mortality rate in female is larger than male (24% in F , 15% in M) Most cause of death in burn is septicaemia specially most resistant nasocomial infection (pseudomonas) , because at home those patients are less exposure to such infections so may be this is cause of this dramatic drop in mortality rate So in poorly equipped hospital (when no good isolation of patient no good sterilization ,no ideal dressing or ventilation or accommodation and so) in such circumstances its better to treat moderate burn at home because the ward become source of serous infections

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INTRODUCTION:

More than one million burn injuries incurred annually in the United States, the majority are minor and can be managed on an outpatient basis (1,2) in Iraq because of poor electric supply more people uses alternative energy supply which is not save may be important cause of increase number of burn injuries Burns are classified according to their depth and size (percentage of the total body surface area, or TBSA). Treatment and prognosis are based largely upon these characteristics.. These two assessments largely determine which patients are appropriately managed in the outpatient setting. Accurate classification is not

always possible initially and may require up to three weeks (3,4) Management of burn is multimodality involving local and general management and follow up of patient for complications so its need well equipped unit

I) Local management

Cleaning and Debridement — using skin disinfectants (Hibiclens, Betadine), but disinfectants can actually inhibit the healing process and are discouraged (4) Thus, there is growing support for washing the wound using only mild soap and tap water (3,4,5,6)

Tetanus immunization should be updated, particularly for any burns deeper than superficial-thickness. Tetanus immune globulin should be given to patients who have not received a complete primary immunization. (7)

Dressings — Superficial burns do not require dressings. Although partial and full-thickness burns are generally dressed, some minor burns may be treated without dressings. (open technique) Burns involving fingers or toes should be dressed appropriately. (closed technique).

For burns requiring dressings, there are several options:

1- Basic dressing —, a basic gauze dressing (Particularly for emergency treatment) provides good burn coverage.

2- Biologic and synthetic dressings — Although generally not used in the emergency department, biologic and synthetic dressings can be used to treat partial-thickness burns. Their use reduces the frequency of dressing changes and may reduce pain, help prevent infection, and promote healing (8) Most important problem in local management is contamination and infection The Nasyria burn unit poor equipped ward , poor trained staff , so most of patient gain infection at admission

II) General management

The initial approach to management of the patient with a major burn is similar to that for any other patient experiencing major trauma, as suggested by the American College of Surgeons in the Advanced Trauma Life-Support Course. Assessment begins with a primary survey including evaluation of the A, B, C of resuscitation (*A*irway with immobilization of the cervical spine, *B*reathing, and *C*irculation). Later, a complete secondary survey should be conducted from head to toe to identify associated injuries: although the burn may often be the most obvious injury, other serious and life-threatening injuries can also be present (10) Also we face problem of infection here during general management (central venous cannulation,, NG tube , bladder catheter ….)

III)Follow up of patient management

Here the isolation of patients from each others , from staff , from equipment ….. is very important including design of ward , cleaning methods , aeration and cooling or warming methods , methods of dressing , vaccination and change dressing of staff and visitors , regulation of visiting .

AIM OF STUDY:

Attempt to reduce morbidity and mortality rate in patients who are suffering from burn injuries(moderate percent of total body surface area TBSA) they treated in poor equipped hospital and bad circumstances like Iraq who suffering from bad infrastructure medical institutions

METHODS:

This is prospective study conducted in department of surgery in An Nasyria general hospital in the period between January to December 200^ I notice that most patients with moderat burn (20- 50% TBSA) whom treated as outpatient at home have less morbidity and mortality when compared with patients whom treated at this burn unit (with poorly equipped as see in above photos). 407 patients were admitted to burn unit , 61 patients has a sever burn > 50% of TBSA all of them are died except one patient so that this group not included in my study . 230 patients has burn < 20% of TBSA all of them are alive no mortality , so this group also not involve in this study , I chose the third group 116 patients they had moderate burn between 20 - 50 % of TBSA , divide them into 2 subgroups:-
first group (group A 54 patients) receive treatment of emergency and shock (IV fluid , antibiotic , antitetanous vaccine , first dressing) in the burn unit for less than 72 hours then continue there management and follow up at home as outpatient (use open method by exposure to sun light with laminar air flow us traditional fan , wash by water and soap and some other simple management local and systemic triple antibiotic) second group (group B 62 patients) continue there management at hospital at burn unit , use same above management because we have poor equipped unit , then compare the mortality and morbidity rate between two groups

RESULTS:

All patients who have burn (between 20 - 50 % of body surface) admitted in the burn unit in An Nasyria hospital between 1/January /2008 to 31/December 2008 , I don't included patients whose burn < 20% of total body surface area (230 patients because no one died due to burn complication) Also I not included patients whom > 50 % of TBSA (61 patients all of them are died except one patient.

Age group

There is difference in number of patients who suffering from burn injury according age groups, The most age group is under 10 years 59 patients about 50% but subgroup (who under 2years) poorly resistance to burn complications (10 of 21 about 48%) of them died during few days of admission in hospital While subgroup (3- 10 years) have good resistance to complications (only 2 patients of 38 patients about 4.5%)are died

Sex Disterbution

Both sexes are equally suffering (59 female , 57 male patients are addmeted) but female have more mortality rate than male as a result of burn complications

Days of addmition in hospital

The mortality in patients who leave hospital early is much better than who stay for long period even those who suffering from relatively large % TBSA burn

Rate of addmition

There is difference in rate of addmition to the burn unit along year , most of patients admit during months of winter (December , January,

February) about 151 patients among 416

DISCUSSTION

The destruction of infrastructure of my country (Iraq) including medical institutions because of series of wars and sanctions let us to change our planning and maneuvers of management of some medical problems such as burn In my city An Nasyria we have very simple and poorly equipped burn unit there is no isolation , all patient putting at same ward without separation , weak sterilization , bad dressing, bad bathing , so its unfortunately there is high number of patients died after burn injury even moderate percentage of surface area (as example) In table (1) 116 patients who suffering from moderate burn (between 20 - 50 % of TBSA) admitted in the burn unit in Al Nasyria hospital 23 patients (20%) were died which is very high mortality rate this high mortality rate urged me to do this study In USA 2 million per a year people are burned, 80 000 are admitted to hospital, and 6500 lose their lives each year (8.1%). survival from burn injury involving 30 per cent of the body surface area at any age was almost unprecedented (9) In table 2 The most age group suffering from burn injury is under 10 years 59 patients among 116 patients (about 50%) but subgroup (who under 2years) poorly resistance to burn complications 10 among 21 patients (about 48%) of them died during few days of admission in hospital While subgroup (3- 10 years) have good resistance to complications (only 2 patients of 38 patients about 4.5%)are died. Today in USA, children survive burns affecting more than 90 %of TBSA, and young and middle-aged adults with more than 70 % burns survive routinely. These dramatic improvements have come from the recognition that destroyed and damaged tissues must be removed promptly after the injury and that the wound must be physiologically closed immediately thereafter. (9)The physiologic impact of the injury or the severity of the burn can be judged from the quantity of tissue involved , in the a small injury will generally require little treatment and often does not greatly alter the cardiovascular and metabolic state. so its can be treated as out patient while moderate and large injuries require resuscitation of the patient and have potentially dire cardiovascular and metabolic consequences. so should be treated in burn unit for follow up. In table 3 and figure 2 show that both sexes are equally suffering from burn injury but mortality rate in female is larger than male (24% in F , 15% in M)In table 4 and figure 3 show that patients (group A) who admit hospital less than 72 hours for resustation then go home and follow them as out patient , While secon d group (group B) complete there management and follow up at hospital until they be well or die , I find the mortality rate in group A (11%) is less than group B (27%) in spit of they managed at hospital and under supervision of senior , Most common cause of death in burn is septicaemia specially most resistant nasocomial infection (pseudomonas) , so when patient go home those patients are less exposure to such infections so may be this is cause of this dramatic drop in mortality rate Table 5 show great addmition rate at winter than other seasons may be due to

wide use unsafe methods of heating (kerosene heater)

CONCLUSION :

1- There is rule in management of burn , most or all references indicate in moderate or sever burn cases (> 15% TSBA in adult , > 10% in children) the patient should admit hospital But in poorly equipped hospital (when no good isolation of patient no good sterilization ,no ideal dressing or ventilation or accommodation and so) in such circumstances we cannot follow this rules , the ward become source of infections , I find that the patients with moderate burn (20- 50 %) who treated at home (outside hospital) with simple measures like (exposure to sun light, laminated airflow with fan simple dressing and good cover with antibiotic) have better prognosis than who treated at hospital with same measures { mortality rate 11%, 27% successively } 2- both sexes equally suffering but female relatively poor resistant to the burn injury (mortality rate 24% in female , 15% in male) 3- most age group have good prognosis is between 3-10 y may be due to raped growth rate of tissues while bad group is under 3years may be due to poor immunity 4- most season have relatively high rate of burn injury is winter may be due widely use of old and bad heating methods (like kerosene heater)

Table 1 (death according to TBSA)

% TBSA	No of Patient	o of death
>50%	61	60
20-50%	116	23
<20%	230	0

Table 2(age group distribution)

age group	No of Pt	dead Pt	Mortality rate
<2y	21	10	48%
3-10y	38	2	4.5%
11-20y	24	6	25%
21-30y	17	2	11%
31-40	8	1	12%
41-50	6	1	18%
>50y	4	1	25%

Table 3 (sex distribution)

sex	No of Patient	death	% of mortality
female	59	14	24%
Male	57	9	15%

Table 4(mortality according period of stay of patient in hospital)

period of stay	No of Pt	death	% of mortality
<3days	54	6	11%
>4 days	62	17	27.40%
Total	116	23	20%

Table 5(rate of addmition along year)

month	No of Pt
January	56
February	45
March	31
April	28
May	27
June	30
July	31
August	30
September	21
October	40
November	22
December	50

Figure 1(age group distribution)

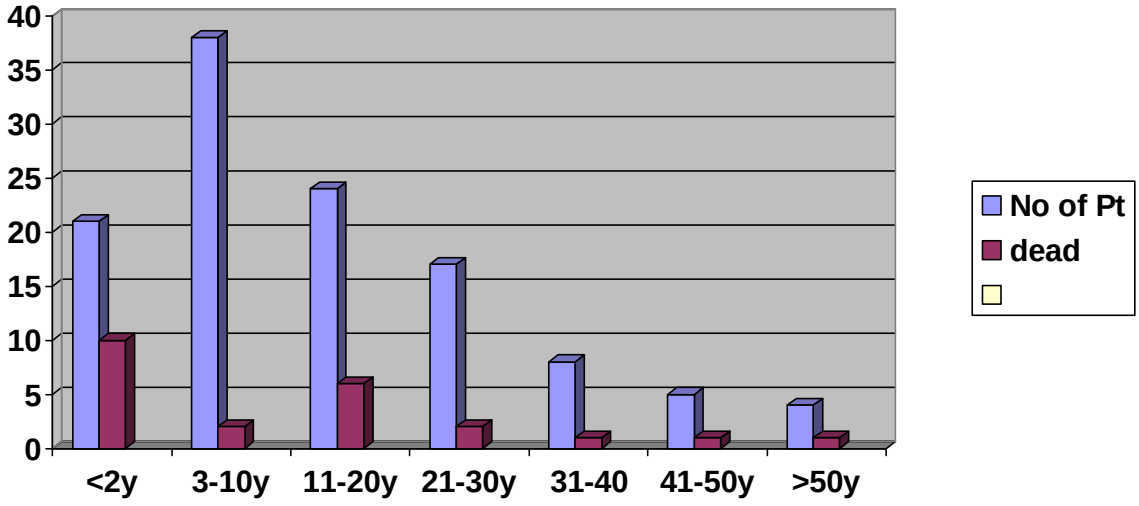


Figure 2(sex distribution)

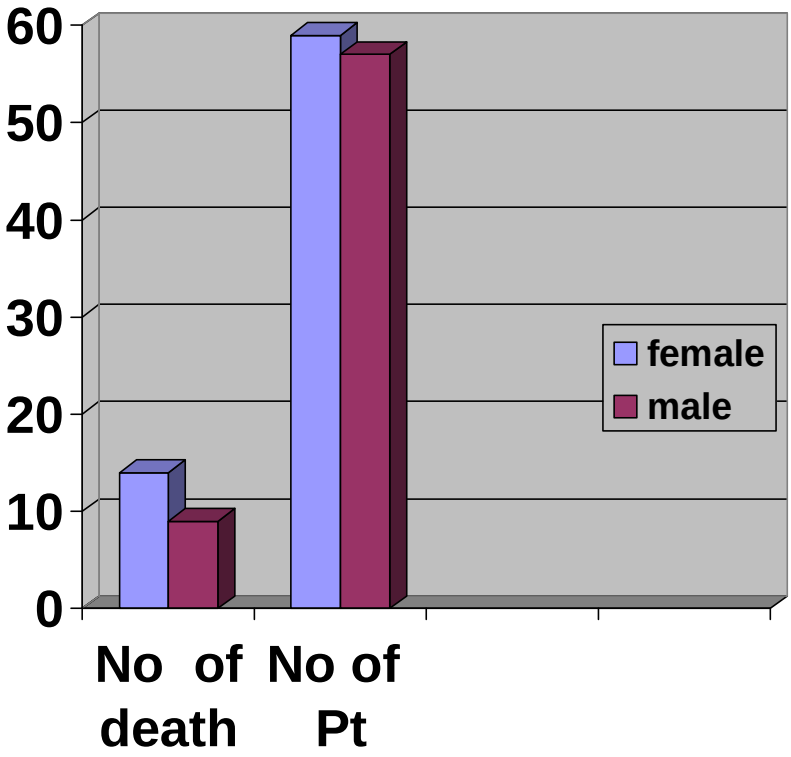
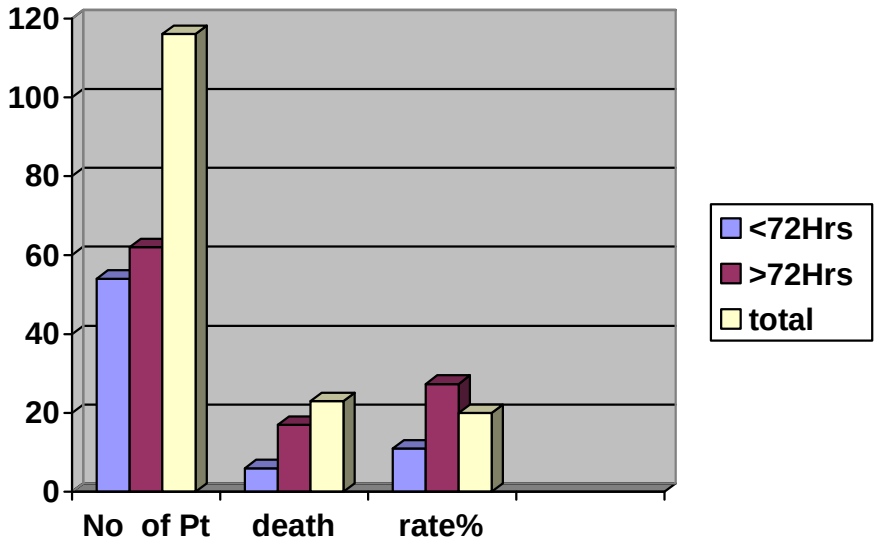


Figure3(mortality according period of stay of patient in hospital)



Bad equipped ward

Bad isolation

Management of burn in poor equipped hospital

REFERENCES:

1. Brigham, PA, McLoughlin, E. Burn incidence and medical care use in the United States: estimates, trends, and data sources. J Burn Care Rehabil 1996; 17:95.

2. American Burn Association: burn incidence fact sheet www.ameriburn.org (Accessed 6/2/05).

3. Mertens, DM, Jenkins, ME, Warden, GD. Outpatient burn management. Nurs Clin North Am 1997; 32:343.

4. Baxter, CR. Management of burn wounds. Dermatol Clin 1993; 11:709.

5. Waitzman, AA, Neligan, PC. How to manage burns in primary care. Can Fam Physician 1993; 39:2394.

6. Greenhalgh, DG. The healing of burn wounds. Dermatol Nurs 1996; 8:13.

7. Karyoute, SM, Badran, IZ. Tetanus following a burn injury. Burns Incl Therm Inj 1988; 14:241.

8. Bethel, CA, and Krisanda, TJ. Burn care procedures. In: Clinical Procedures in Emergency Medicine. 4th ed, Roberts, JR, Hedges, JR (Eds), Saunders, Philadelphia 2004. p.749.

9. Ryan CM, Schoenfeld DA, Thorpe WP, Sheridan RL, Cassem EH, Tompkins RG. Objective estimates of the probability of death from burn injuries. *New England Journal of Medicine* 1998; **338**: 362–6.

10. Sheridan RL, Baryza MJ, Ryan CM, Schulz JT, Tompkins RG. Acute hand burns in children: management and long term outcome based on a ten year experience with 698 injured hands. *Annals of Surgery* 1999; **229**: 558–64

علاج مرضى الحروق في مستشفيات ضعيفة التجهيز

***الدكتور مسلم قنديل كاظم**

خلاصه البحث

دراسة مستقبليه أجريت في مستشفى الحسين التعليمي في الناصريه كان هدف الدراسه هو محاوله تقليل الوفيات للمصابين بالحروق . حيث اخذ كل المصابين الراقدين بردهه الحروق (نسبة حرقهم تتراوح بين ٢٠ % الى ٥٠% من المساحه السطحيه للجسم) خلال سنه ٢٠٠٨ وكانوا ١١٦ مصابا ولقد قسموا الى مجموعتين :

المجموعه(أ) هم المرضى اللذين اكملوا علاجهم في البيت بعد العلاج الاولي في الردهه

المجموعه (ب) هم المرضى اللذين اكملوا علاجهم في ردهه الحروق (وهي ردهه ضعيفه التجهيز و غير مصممه بشكل علمي) فكانت النتائج كالآتي:-

* نسبه الوفيات في المجموعه (أ) ١١% بينما في المجموعه(ب) ٢٧%
* كانت اكثر فئه عمريه هي تحت سن ١٠ سنه (٥٩ مصابا ٥٠%) ولكن الاطفال اقل من سنتان اكثر عرضه للمضاعفات والوفات مقارنتا ببقيه الفئات العمريه(١٠ اطفال توفوا من اصل ٢١ طفلا أي ٤٨%)
* نسبه الاصابه بالحروق متساويه تقريبا بين الجنسين ولكن الاناث اكثر عرضه للوفاة من الذكور (٢٤% للاناث ١٥ % للذكور)

ان اكثر سبب للوفات للمصابين بالحروق الواسعة هو الخمج الجرثومي المقاوم للمضادات الحيويه (السيدومونس) والتي تتواجد عادتا في المستشفيات اللتي لم تصمم بشكل صحيح ولم تراعى التعقيم بشكل علمي حيث تتناقل هذه الجرثومه من مريض الى اخر وتكون اكثر فتكا حيث تكتسب مقاومه ضد المضادات الحيويه ويكون علاجها محرجا

لذا فقد استنتجت بان علاج الحروق الواسعه يكون افضل خارج المستشفى مع المتابعه (اذا كان غير مجهز بالاجهزه المتطوره وغير مصمم بشكل علمي يراعي فيه وسائل العزل والتعقيم) وذلك لان المستشفى سيكون حين ذاك مصدرا للتلوث باخطر الجراثيم

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