

## Comparison of Healing Outcomes between Insulin Dressing and Paraffin Gauze Dressing in Second-Degree Burns of the Upper Extremity

Umbreen Minhas

### ABSTRACT

**Background:** Burn injuries are among the most severe types of trauma, with second-degree burns affecting the epidermis and papillary dermis, typically healing within two weeks. Various dressings, including paraffin and insulin gauze, are used to manage such wounds and enhance healing.

**Objectives:** To compare the efficacy of insulin dressing versus paraffin gauze dressing for managing second-degree burns on the upper extremity, using the Pressure Ulcer Scale for Healing (PUSH) to assess healing outcomes.

Study design: Randomized Control trial

**Methodology:** Rawalian burn and reconstructive surgery department, Holy Family Hospital, Rawalpindi from 1-December-2019 to 31-may-2020. A total of 60 patients with second-degree burns were randomly assigned to two groups: Group A (paraffin gauze dressing) and Group B (insulin dressing). The study employed non-probability consecutive sampling, with inclusion criteria including patients aged 12-60 years with a total body surface area (TBSA) of 5-20%. Wound healing was assessed using the PUSH (Pressure Ulcer Scale for Healing) scale at regular intervals: 3rd, 5th, 7th, 9th, 11th, 13th, and 15th post-burn. Statistical analysis was performed using SPSS version 23, with p-values  $\leq 0.05$  considered significant. Results: The mean PUSH scores indicated that Group A showed a slower rate of healing compared to Group B. On the 3rd day, Group A had a PUSH score of  $13.30 \pm 2.0$  versus  $12.90 \pm 1.7$  in Group B ( $p=0.02$ ). By the 15th day, Group A's score was  $0.03 \pm 1.8$ , while Group B's was  $0.00 \pm 0.0$  ( $p=0.00$ ). The overall mean healing progression was significantly faster in Group B, especially notable from the 11th day onward.

**Conclusion:** Insulin dressing was found to be more effective in promoting faster wound healing compared to paraffin gauze dressing in second-degree burns of the upper extremity.

**Keywords:** Insulin gauze, Paraffin gauze, Second degree burn.

## Presentation and Management Outcome of Childhood Scald Burns Managed with Hydrocolloid Dressings Compared with Silver Sulphadiazine Dressings

Muhammad Saaq

Consultant plastic surgeon, National Institute of Rehabilitation Medicine (NIRM), Islamabad.

email: muhammadsaaq5@gmail.com

### ABSTRACT

**Objectives:** Scalds constitute the most common type of childhood burns. Given their potential for spontaneous healing, a variety of dressings are used to promote healing and prevent infection.

**Methodology:** This comparative study was carried out to document the clinical presentation of pediatric scald burns and evaluate their management outcome with hydrocolloid dressings versus silver sulphadiazine (SSD) in terms of complete healing, healing time, mean number of dressings required to achieve healing and any need for split thickness skin grafting at three weeks. The study included all pediatric scald patients (aged  $\leq 15$  years) who presented with superficial partial-thickness and deep partial-thickness wounds during the study period. Exclusion criteria included children over the age of 15 years, facial scalds and full thickness scalds. Half of the patients were randomly assigned to the hydrocolloid group and half to the SSD group.

**Results:** Out of a total of 100 patients, 66% ( $n=66$ ) were males whereas 34% ( $n=34$ ) were females. Age ranged from 3 months to 15 years, with a mean of  $2.88 \pm 2.86$  years. Total body surface area (TBSA) affected ranged from 3% to 17% with a mean of  $7.00 \pm 4.76\%$ . The majority of the children (75%) were managed on an outpatient basis whereas 25% were hospitalized.

**Conclusion:** Hydrocolloid dressings yielded superior results in terms of complete healing of the scalds, healing time, the mean number of dressings required to achieve healing and less frequent need for split thickness skin grafting at three weeks. Given the observed benefits, hydrocolloid dressings should constitute the preferred choice of dressing for managing superficial and deep partial thickness scalds in the pediatric population.

**Keywords:** Scalds, Silver sulphadiazine, Hydrocolloids, Pediatric burns, Childhood scalds.

## Our Institutional Antibigram; the Insight Gained in Selection of Empirical Antibiotics for the Treatment of Burn Wound Infection.

Zubaida Irshad

### ABSTRACT

**Objectives:** To find the prevalence of and summarize antibiotic susceptibilities of bacteria, isolated from burn wound samples through culture and susceptibility testing against the tested antibiotics, and construct our hospital specific cumulative antibiogram. To calculate the percent frequencies of different antibiotics prescribed as empirical treatment and to assess their appropriateness on the basis of findings of our cumulative antibiogram and to suggest suitable antibiotics for empirical treatment in our hospital.

**Methodology:** It was a cross sectional, descriptive, observational study; conducted in a tertiary care burn centre for six months. Sampling was by consecutive non probability method for antibiogram construction. A summary of antibiotic susceptibilities of isolated bacteria to tested antibiotics and prevalence of isolated species and genera of bacteria in percentages was determined by analyzing wound culture and susceptibility reports of burn wound clinical samples to construct antibiogram. The frequency of different antibiotics prescribed as empirical were determined in percentages.

Simple random sample of each isolated bacterium for which antibiogram was constructed was taken and susceptibility to most commonly prescribed empirical antibiotics was determined to find out whether the prescribed antibiotics were suitable according to our antibiogram. Chi square goodness of fit test was done by using online Chi Square Goodness of Fit Calculator. to analyze difference between observed and recommended susceptibilities of bacteria to already prescribed empiric antibiotics.

**Results:** Collectively the gram-negative bacilli (79.13%) and individually Klebsiella pneumonia (P. pneumonia) (23.33%), Pseudomonas aeruginosa (P.aeruginosa) (22.94%) and Staphylococcus aureus (S. Aureus) (14.55%) were most common respectively. The highest susceptibilities by all isolates were shown to carbapenems, piperacillin/tazobactam, and amikacin. Chi square goodness of fit test showed that the cumulative susceptibility of bacteria to already prescribed empiric antibiotics amoxicillin/clavulanic acid and cefoperazone/sulbactam was significantly different with p values < .5, and when seen in the context of findings of our cumulative antibiogram were significantly lower than our recommended cut off susceptibility of 60%.

**Conclusion:** Antibigram is useful in predicting the trends of antimicrobial resistance in an institution. The antibiogram survey revealed a mismatch between the susceptibility reports and the common empirical antibiotic prescribing trends in our hospital.

**Keywords:** Burn Wounds, Antibiotic Susceptibility, Antimicrobial Resistance.

## Diagnostic Accuracy of Procalcitonin in Predicting Wound Sepsis in Burn Patients

Maheen Fatima<sup>1</sup>, Shareen Lakhani<sup>2</sup>, Mazhar Nizam<sup>3</sup>

<sup>1,2</sup>Resident Plastic surgery, <sup>3</sup>HOD Plastic Surgery, Patel Hospital

### ABSTRACT

**Objective:** To determine the diagnostic accuracy of procalcitonin in predicting the wound sepsis in burn patients.

**Methodology:** This Cross sectional study was conducted at Department of Burns and Plastic Surgery at Patel from February 2024 to August 2024. It was calculated to be 81 with confidence interval of 95% and margin of error of 10%. All patients of age 18 – 70 years regardless of gender & mechanism of burn, admitted in Burns ICU within 48 hours of burn were enrolled in the study. Any patient with history of infection prior to burn injury or discharge or die within 48 hours of admission were excluded. Tissue culture was sent after 48 hours of admission in primary patients and on the day of admission in case of referral patients as per departmental protocol. Culture reports were obtained after 48 hours. Procalcitonin level of greater or equal to 2ng/ml was considered as positive for wound sepsis. Data analyzed via SPSS version 21. Mean and standard deviation calculated for age, height, weight, BMI Frequency and percentages were calculated for gender, smoker and comorbidities and outcome variable i.e. wound sepsis. Sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy of procalcitonin was calculated by taking culture positive as gold standard. Effect modifiers controlled through stratification of age, gender, BMI, smoker and comorbidities to see the effect of these on outcome variables. Post stratification analysis was also done.

**Results:** The mean age of the enrolled patients was 32.33±10.65 years, mean height was 1.7+ 0.1 m, mean weight was 63.6+13.87 kg, mean BMI was 29.11±5.96 kg/m<sup>2</sup> and mean duration of surgery was 82.99±33.36 minutes. Out of total 81 patients, 18 (22.2%) were female and 63 (77.7%) were male. 11 (13.5%) were hypertensive patients and 18 (22.3%) were diabetic patients. Wound Sepsis was found in 57 (70.3%) burn cases. Sensitivity, specificity, PPV, NPV & diagnostic accuracy of Procalcitonin in Predicting the Wound Sepsis in Burn patients was 87.7%, 83.3%, 92.5%, 74% and 86.4% respectively.

**Conclusion:** Procalcitonin can be a helpful adjunct to clinical diagnosis of sepsis and holds promise as a method for reducing antibiotic exposure in the critically ill patient. Procalcitonin appears to be a powerful marker of sepsis in burn patients. It is sensitive, specific, reliable and easy to measure.

**Key Words:** Burns, Sepsis, Procalcitonin (PCT), Severity.

## Comparison of Outcome of Conventional Antimicrobial Ointment Treatment and Nanocellulose Facemask Treatment in Superficial Partial Thickness Facial Burns

Mamoona Khadam, Mustehsan Bashir, Muhammad Sohail

### ABSTRACT

**Objective:** To compare the outcome of conventional antimicrobial ointment (polymixin B) and nanocellulose face mask in superficial partial thickness facial burns in terms of pain and duration of wound healing.

**Methodology:** After approval by hospital ethical committee, informed consent was obtained. Pretreatment photographs were taken. Sixty four patients with superficial partial burn thickness of face were included in study. Conventional antimicrobial ointment treatment cases were treated with Polymixin B ointment treatment and nanocellulose facemask treatment was used for the other group. Outcome measured were pain, wound healing time, complications (infection and hypersensitivity) and hospital stay.

**Results:** Mean pain scores observed were significantly less in NC group  $3.5 \pm 0.4$ , as compared CA group  $4.4 \pm 0.6$ . Also the duration of hospital stay was less in NC group than CA group i.e.  $6.8 \pm 1.0$  and  $10.9 \pm 3.4$  respectively. Healing is better and quicker in NC group also. The complications observed were minimal in both groups.

**Conclusions:** Nanocellulose facemask treatment is a viable option for treatment of facial burns. It is easy and safe to apply, and accelerate wound healing. Nanocellulose is preferable choice whenever available.

**Key words:** Superficial partial Thickness Burn, Conventional Treatment, Wound healing, Nanocellulose.

## Appearance Anxiety, Health-Related Quality of Life and Coping Strategies among Burn Patients in Pakistan

Jaweria Aftab, Ansa Qurat-ul-ain, Muhammad Rehan, Fahama Qamar, Tariq Iqbal

Department of Humanities, Education, and Psychology, Air University, Islamabad

Assistant Professor, Department of Humanities, Education, and Psychology, Air University, Islamabad

Post- Graduate Resident Burns Surgery

Department of Humanities, Education, and Psychology, Air University, Islamabad

Consultant/HOD Burns Surgery Department

### ABSTRACT

**Objective:** To investigate the coping strategies employed by burn patients to manage appearance anxiety and identify potential targets for psychological interventions to enhance their quality of life.

**Methodology:** A cross-sectional study was conducted on 92 burn patients discharged from the Burn Care Centre at PIMS, Islamabad. Participants had visible scars from burn injuries. Data collection tools included the Brief COPE Questionnaire (BCOPE), Health-Related Quality of Life Questionnaire (HR-QOL), and Social Appearance Anxiety Scale (SAAS). Data were analyzed using percentages and regression analyses. The average age of participants was  $27.5 \pm 32.5$  years. Mediation analysis was used to assess the relationship between social appearance anxiety, coping strategies, and quality of life.

**Results:** The findings revealed that social appearance anxiety had a non-significant direct impact on health-related quality of life. Emotion-focused coping strategies played a critical role in mitigating the effects of appearance anxiety on the quality of life.

**Conclusion:** Emotion-focused coping strategies are essential in reducing the impact of social appearance anxiety on burn patients' quality of life. These findings emphasize the need for psychological interventions to improve the well-being of individuals living with visible differences due to burn injuries.

**Keywords:** Burns, Social Appearance Anxiety, Scars, Quality of Life, Coping Strategies.

## Developing and Testing a Conceptual Model of the Impact of Burns on Oral Health and Oral Health-Related Quality of Life: A Structural Equation Modeling Approach

Farooq Ahmed Chaudhary

### ABSTRACT

**Objective:** This study aims to develop and validate a structural model to assess the direct effects of facial burns on oral health and oral health-related quality of life (OHRQoL), as well as the indirect effects mediated by psychological and socio-economic factors, testing the model's overall adequacy.

**Methodology:** This cross-sectional study involved 280 burn patients aged 15-55 years from the Burn Unit, Hospital Universiti Sains Malaysia (HUSM), Kota Bharu, Kelantan, Malaysia. Data were collected through intraoral examinations for dental clinical measures (DMFT, CPI, OHI-S) and questionnaires assessing burn characteristics, sociodemographic information, OHRQoL, psychological factors, and mediating factors. Structural equation modeling with maximum likelihood estimation was used to estimate the relationships between all these variables in the applied model.

**Results:** There is a significant direct effect of burns on oral health (0.67), psychology (0.33), and socio-economic status (0.23) of burn patients. Psychological factors negatively affected oral health (-0.21) and oral health behaviors (-0.31), which in turn negatively impacted oral health (-0.24) and OHRQoL (-0.43). Social support and resilience had no significant impact on either psychological factors or oral health and OHRQoL.

**Conclusion:** The study is the first to provide evidence of the impact of burn on oral health and oral health related quality of life. Structural equation modeling supports the construct model, elucidating the complex pathways between burns and oral health in burn patients, as most of the pathways hypothesized by the model were significant.

**Keywords:** Facial Burns, Oral Health, Oral Health-Related Quality of Life (OHRQoL), Psychological Factors.

## Can We Save Life and Limb by Early Aggressive Approach in High Voltage Electric Burns (HVEB)

Razia, Tahir Masood Ahmed, Rao Saood, Ghazanfar Ali, Rana Hassan

CMH Rawalpindi

### ABSTRACT

**Objective:** The objective of this study is to highlight the benefits of early aggressive approach in limb and lifesaving. In HVEB early resuscitation and wound exploration coupled with early decisions on the need for amputation would reduce the morbidity and mortality.

**Methodology:** Retrospective study was done in CMH Rawalpindi over a period of one year from sep 2023 to sep 2024. Patients of all group of ages were included in the study who presented early in first 24 hours after the incident. Patient with poly trauma were excluded. Management include early fluid Resuscitation to keep urine output 1ml/kg/hour, 24 hourly cardiac monitoring. Monitoring for myoglobinuria, early fasciotomies and escharotomies were done in patient developing compartment syndrome. Early aggressive debridement and review after 24 hours for further debridement, early decision of limb amputations and disarticulations. VAC dressing and STSG. Local, regional and free flap for soft tissue coverage.

**Results:** 18 patients met inclusion criteria, out of them 10 were children. Most effected site was upper limb.

All 18 patients survived. All limbs of 8 patients were saved by early fasciotomies and coverage with STSG only.

Limbs and life of 6 patients saved by early aggressive debridement and coverage with local and free flaps.

Life of 4 patients saved at expense of amputation or dis articulation of 1-2 limbs.

**Conclusion:** Early aggressive resuscitation, radical debridement, fasciotomies along with timely decision of either soft tissue coverage or amputations has crucial role in reducing mortality and morbidity in HVEB.

## A Meta-Analysis of Early Versus Delayed Excision in Adult Burn Patients and their Impacts on Mortality Rates

Muhammad Zuhaz Azeem, Hassan Sadiq, Hannan Saleem, Amna Batool, Hamza Ahmed, Alizay Haroo, Rameen Ali, Muhammad Husnain

NUST School Of Health Sciences

### ABSTRACT

The time of surgical excision in burn care is a subject of on going debate, with differing perspectives on whether early or delayed excision can or may offer better outcomes. Current studies present inconsistent findings due to variations in design, population, and outcomes measured, making it challenging to reach definitive clinical recommendations. This meta-analysis aims to synthesize the available evidence on the impacts of early excision versus delayed excision in adult burn patients with  $\geq 20\%$  TBSA.

A systematic search of PubMed, Google Scholar, Popline and other relevant databases was conducted to identify eligible studies. All available articles were included. Rayyan software was used for screening of studies. The data was extracted from the selected articles and were also subjected to assessment of Risk Of Bias. R was used to run and conclude the random effect model of meta analysis.

This meta-analysis will provide critical insights to guide clinical decisions on the optimal timing of surgical intervention for burn patients and contribute to the development of evidence-based guidelines for burn management.

## The Majic of Early Excision and Grafting (E&G) versus Delayed Excision and Grafting (D&G): A Comparison of Outcome

Muhammad Saaq

Consultant plastic surgeon, National Institute of Rehabilitation Medicine (NIRM), Islamabad.  
email: muhammadsaaq5@gmail.com

### ABSTRACT

**Objectives:** To document the epidemiologic profile of burns patients and determine the outcome of Early excision and grafting (E&G) versus Delayed excision and grafting (D&G).

**Methodology:** The study included patients of either gender and all ages, who had sustained deep burns of up to 40% total body surface area. Half of the patients had early excision and skin auto grafting (i.e. within a week of sustaining burn injury) while the rest had delayed excision and skin auto grafting (i.e. after 1-4 weeks of sustaining burn injury).

**Results:** Significant differences were found in favor of the early excision and grafting group with respect to the various burn management outcome parameters studied. i.e., culture positivity of wounds, graft take, duration of post graft hospitalization, and mortality.

**Conclusion:** Early excision and grafting (E&G) should be the preferred management strategy among patients with deep burns.

**Key Words:** Deep Thermal burns. Early excision and grafting. Delayed excision and grafting.

## Self-Esteem among Women with Facial Burns: Pakistani Perspective

Rabeya Tariq<sup>1</sup>, Muhammad Rehan<sup>2</sup>, Omar Khawar Khokhar<sup>2</sup>, Tariq Iqbal<sup>2</sup>, Sylvia Ali Khan<sup>3</sup>, Qurra tul Ain<sup>2</sup>, Tayyaba Faisal<sup>2</sup>,  
Usman Waheed<sup>2</sup>, Nadia Younas<sup>1</sup>

<sup>1</sup> Department of Clinical Psychology, Shifa Tameer i Millat University, Islamabad, Pakistan

<sup>2</sup> National Burn Care Centre, Department of Burn and Reconstructive Surgery, Shaheed Zulfiqar Ali Bhutto Medical University, Pakistan Institute of Medical Sciences, Islamabad, Pakistan, <sup>3</sup> Department of Psychiatry, Northwest General Hospital and Research Centre, Peshawar, Pakistan

### ABSTRACT

**Objective:** To determine any association between lower levels of self-esteem among females with facial burns and their age and marital status.

**Methodology:** This cross-sectional descriptive study was conducted at the National Burn Care Centre, Pakistan Institute of Medical Sciences (PIMS), Islamabad from Jan - Jul 2022. The data were collected from female patients who had suffered burn injuries to the face and neck area. Non-probability consecutive sampling technique was used. Inclusion criteria were females with facial burns and/or neck burns. First degree facial burns and females with comorbidities were excluded from the study. The Urdu translated version of the Rosenberg Self-Esteem Scale was used to measure low self-esteem among women with facial burns. For subgroup analysis, the patients were stratified into two age groups: Young adults (aged between 18-35 years) and adults (aged between 36-60 years). Statistical tests were employed to find out the association among facial burn and self-esteem with respect to age group and marital status. Results: Out of 348 females, 239 (68.6%) had low self-esteem. The participants were aged between 18-50 years. The underlying causes of the facial burns among the included females were scalds (n=175), flame burns (n=114) and flash burns (n=59). 110 patients had second degree superficial burns, 201 patients had second degree deep dermal burns and 37 patients had third degree burns. Patients in both age groups were facing a lower level of self-esteem however, there was a low count of adult women 108 (59.01%) with low self-esteem and a high count of young adult women 131 (79.3%) with low self-esteem. 75 (70.75%) married women with facial burns had low self-esteem whereas 164 (86.77%) unmarried women with facial burns suffered from low self-esteem. Conclusion: The study found that young adult females and unmarried females were more vulnerable to develop low self-esteem. There is a need for psychological care and support for burn victims with facial involvement as their mental state is being affected. Key words: Facial Burns, Females, Low Self-Esteem.

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## Experience of Burns at POF Hospital Wah Cantt

Dr Munawer Latif

Assistant Professor of Surgery,  
Wah Medical College, POF Hospital, Wah Cantt.  
mun\_cooldoc@hotmail.com

## ABSTRACT

Burns are a preventive cause of death with majority of the patients are the victims of house hold fire in our society mainly involving women and children and mostly accidental. Burns are a serious disease, the patients are miserable, needing intensive care but unfortunately ignored in our hospitals with untrained staff and non-interested personnel looking after them. Lack of proper public awareness, limited proper burn centers with untrained personnel, poor outcome of severe burns and long-term expensive management are the main determinants of poor outcome following burns. with rising inflation and the expensive management of burn especially intensive care and costly dressings, most of the patients prefer a home treatment or public burn facility. There is a strong need of time for proper burn facilities in every city, which work as a referral centre and responsible for the public awareness and the management of burns.

POF Hospital, Wah Cantt is a tertiary care hospital with a 15 bed burn centre. It was one of the earliest burn centre in the locality with primary aim to manage burn victims of employees working in Pakistan ordinance factories. Over the period of time, it earned the reputation in the management of burns and became a referral centre for the management of all types of burns. The aim of talk mainly focuses upon the introduction of our burn centre, sharing our experience, the workload, the burns management at our facility and challenges/ problems we come across.

## Is Burns an epidemic? Sociodemographic Characteristics of burns in Regional Center of Kpk

Ihsanullah Khattak, Waqas Hayat, Fazle Khuda, Tahmeedullah

Burns &amp; Plastic Surgery Center, Peshawar

## ABSTRACT

**Objective:** The aim of our study is to study the demographics of burns at our center.

**Methodology:** This Descriptive Cross-sectional study was conducted at Burns and Plastic Surgery Center, Peshawar. Data was collected starting from 1st January 2019 up to 31st December 2022. This data was collected from our Burns and Plastic Surgery Center electronic medical record system after institutional review and ethical board (IREB) approval. Data was sorted with respect to region, gender and age. Data was pruned and analyzed in the SPSS software.

**Results:** A total of 15433 cases presented to our burns emergency department. Of these 7918 were male and 7515 were female, with 1:1 male to female ratio. Of those 8013 were aged less than 15 years. Total surgical procedures done were 4475. Average number of surgical procedures that each patient has undergone was  $3.319 \pm 2.99$ . Total outpatient visits were 20939 with average number of 5,235 visits per year. Majority of outpatient visits were received from residents of Peshawar (12,698, 60.64%).

**Conclusion:** Burns is a serious cause of preventable injuries. The victim lives with the consequences of the disease for the rest of their life. A focused prevention campaign must be launched with emphasis on safety of home appliances and safety of equipment in workplace to prevent such injuries. Basic burns care should be provided district wise to improve access to healthcare for all patients.

## Intravenous Vitamin C: A Lifeboat for Burn Patients

Kanwal, Umar Asif

Burns and Plastic Surgery Département, Mayo Hospital

## ABSTRACT

**Objective:** To optimise outcome in burn patients, timely and adequate resuscitation has a significant role.

**Methodology:** 60 patients, 30 in each group were included filtered by an inclusion criterion. This included 15-35 years age presenting within two hours of burn incidence, all patients did not have any comorbid conditions. Group A had Vitamin C used according to body weight. Fluid resuscitation using ringers' lactate was done in both. In Vitamin C group resuscitation fluid was calculated using parkland formula as a multiple of three ( $3 \times TBSA \times \text{weight}$ ) whereas in control group it was calculated with a multiple of 4. In both groups the urine output was measured and maintained at 0.5-1ml/kg body weight. Any additional fluid required to maintain this was separately documented. Blood counts were documented at 0, 12, 24 hours of beginning of resuscitation. Similarly hourly vitals monitoring including heart rate, blood pressure, temperature and oxygen saturation was done. In addition to these parameters pre resuscitation and post resuscitation 1 cm<sup>2</sup> area dermal deep skin was harvested using topical 5% lignocaine, skin pieces were weighed and difference between two was an estimation of water content post resuscitation.

**Results:** Vitamin C group show less resuscitation fluid required in similar percentage of burn in same aged patient. Similarly, blood counts also show improvement in hematocrit levels at the end of resuscitation. Heart rate, blood pressure, temperature and oxygen requirement remained significantly lower in Vit C group as compared to other group (p value <0.05).

Overall, there was a significant decrease in morbidity in studied groups, 9 out of 30 patients from Vitamin C group required ICU admission as compared to 12 patients out of 30 needed ICU admission.

**Conclusion:** Vitamin C is a good choice with its numerous attributes as an anti-oxidant that helps burn victims in many ways, improves morbidity and reduces over all hospital stay. Hence we recommend its use as standard protocol for fluid resuscitation.

## Integrated Rehabilitation Program for Burn Survivors in Low-Resource Settings: A Multicomponent Approach

Nasim Chaudhry<sup>1</sup>, Maria Panagioti<sup>2,3</sup>, Ameer B Khoso<sup>1</sup>, Tayyeba Kiran<sup>1</sup>, Zainab Zadeh<sup>1</sup>, Sehrish Tofique<sup>1</sup>, Karina Lovell<sup>4</sup>, Helen Brooks<sup>4</sup>, Amy Blakemore<sup>4</sup>, Ozlem Eylem-van<sup>2</sup> Bergeijk, Jahanaria Miah<sup>5</sup>, Sian Falder<sup>6</sup>, Nabila Soomro<sup>7</sup>, Muhammad Mustehsan Bashir<sup>8</sup>, Muhammad Rehan<sup>9</sup>, Duolao Wang<sup>10</sup>, Rakhshi Memon<sup>11,12</sup>, Nusrat Husain<sup>5,13</sup>

1. Pakistan Institute of Living and Learning, Karachi, Pakistan
2. Division of Population Health, Health Services Research and Primary Care, National Institute for Health and Care Research Greater Manchester Patient Safety Translational Research Centre, University of Manchester, United Kingdom.
3. Division of Population Health, Health Services Research and Primary Care, Institute for Health Policy and Organisation/Alliance Manchester Business School
4. Division of Nursing, Midwifery and Social Work, School of Health Sciences, Faculty of Biology, Medicine and Health, University of Manchester, Manchester Academic Health Science Centre, Manchester, United Kingdom
5. Division of Psychology and Mental Health, University of Manchester, Manchester, United Kingdom
6. Alder Hey Children's NHS Foundation Trust, Liverpool, UK
7. Sindh Institute of Physical Medicine and Rehabilitation, Karachi, Pakistan
8. Department of Plastic, Reconstructive surgery and Burn Unit, King Edward Medical University Lahore, Lahore, Pakistan
9. Department of Burn and Reconstructive Surgery, Burn Care Centre, Pakistan Institute of Medical Sciences, Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad, Pakistan
10. Liverpool School of Tropical Medicine, The United Kingdom
11. Department of Science and Technology Studies, University College London, London, United Kingdom
12. Manchester Global foundation, Manchester, United Kingdom
13. Mersey Care NHS Foundation Trust, United Kingdom

### ABSTRACT

**Objective:** This present study seeks to determine whether implementing a culturally adapted, multidisciplinary rehabilitation program for burn survivors is clinically effective, cost-effective, sustainable, and scalable throughout Pakistan.

**Methodology:** The project includes six work packages (WPs). WP1 focuses on co-adapting a culturally appropriate burn care and rehabilitation program. WP2 aims to develop and implement a national burn registry. WP3 involves conducting a randomized controlled trial to assess the clinical and cost-effectiveness of interventions in Pakistan. WP4 will evaluate social media campaigns designed to promote burn prevention and reduce stigma. WP5 centers on engaging with key stakeholders to enhance burn-related care and inform policy, while WP6 is dedicated to establishing sustainable capacity and capability.

**Results:** A clinically and cost-effective burn care and rehabilitation program has the potential to save lives while delivering significant health and socio-economic benefits for patients, their families, and the healthcare system in Pakistan. Nationwide implementation, with the involvement of burn centers across all provinces, presents a valuable opportunity to address the issue of limited access to burn care in low- and middle-income countries (LMICs).

**Conclusion:** Burn prevention, care, and rehabilitation have thus far received limited attention in policy initiatives within Pakistan and other LMICs. This study provides an important opportunity to evaluate culturally adapted burn care and rehabilitation programs with potential for broader implementation across LMICs.

## Outcome of Meekk Grafting in Post Traumatic and Post Burn Patients

KHIZRA MUMTAZ, ALI JAVED, NAUMAN GILL

### ABSTRACT

**Objective:** This study determined the outcome of micrografting technique in post-traumatic & post burn wounds in terms of percentage of graft take.

**Methodology:** This descriptive case series was held at Department of Plastic Surgery & Mayo Burn Centre. Non-probability consecutive sampling was employed. The study was carried out between Dec 2019 and June 2020. In patients fulfilling inclusion criteria, Modified Meek grafting was done. Twenty patients with total body surface area >30% were included. The statistics of age, gender, etiology of wound, total area involved and graft take rates were recorded.

**Results:** The mean age was 28.62 years (range 9 – 60) and the average total body surface area (TBSA) involved of the patients was 37.30% (range 30–60%). The most common mechanism was post-burn, accounting for 82.5% of cases, while post traumatic was the cause in 17.5%. Mean graft take was 86.81% on the 10th post-operative day. Graft take in post-traumatic patients was 91.55% while in post burn patients was 85.81%.

**Conclusion:** The modified Meek technique can be utilized efficiently for larger areas of wounds where donor sites are minimal. It should be part of reconstructive surgeon's armamentarium of tools in coverage of large wounds.



## Pyogenic Granuloma Following Second-Degree Burns: A Case Series on Diagnosis, Treatment, and Outcomes

Experience of Burns at POF Hospital Wah Cantt

Saba Kiren

### ABSTRACT

Pyogenic granuloma (PG) is a benign vascular tumor commonly seen in children, typically emerging on the skin or mucosal surfaces. This case series examines ten instances of PG following second-degree burns, presenting unique clinical features and treatment responses. PG, often a result of trauma rather than infection, can mimic other vascular lesions and requires accurate diagnosis to distinguish it from conditions like Kaposi's sarcoma and deep mycosis. The series includes cases of burn injuries caused by various substances, such as hot milk, oil, and boiling water, leading to PG formation. Treatment strategies varied based on the severity and complications of the burns, including bacterial and fungal infections. Standard burn care, including topical antibiotics and dressings, was employed initially, with advanced therapies and surgical interventions applied as needed. Notably, individualized treatment based on microbiological results improved outcomes significantly. This study underscores the necessity for precise diagnosis and tailored therapy to manage burn-related PG and associated infections effectively. Future research should focus on standardized burn care protocols and the impact of antimicrobial treatments on burn healing.

## Enhancing Burn Patient Triage; The Role of Biochemical Markers in Predicting Mortality and Adverse Outcomes - A Prospective Multi-Center, Cohort study

Haneen Kamran

Burns & Plastic Surgery Center, Peshawar

### ABSTRACT

**Objective:** This study aimed to evaluate the predictive value of affordable biochemical markers missing from current scores for burn patient outcomes and compare them to rBAUX and ABSI.

**Methodology:** This prospective cohort study included burn patients aged 13-60 years admitted to Jinnah Burn Center and Mayo Hospital Lahore between November 2023 and April 2024, with a one-month follow-up period. Outcomes measured were mortality, sepsis, AKI, liver dysfunction, and LOS. Biochemical markers (serum albumin, Hb/Cr ratio, Plt/Lymph ratio, De Ritis ratio) were recorded 1 day post-admission to account for hemodilution due to fluid resuscitation. Exclusions included patients given albumin treatment, patients with electrical burns, or incomplete follow-up. Categorical variables were reported as n (%), and continuous variables as mean  $\pm$  SD or median (IQR). Cox regression, adjusted for collinearity ( $VIF > 2$ ), was utilized to assess predictors of outcomes. ROC analysis evaluated the predictive capacity of the markers. Linear regression identified variables affecting LOS. ERB and IRB approvals were obtained from both institutes. All analyses were performed using IBM SPSS v24.

**Results:** The cohort included 191 patients (42.4% female; mean age  $32.7 \pm 12.8$  years), mainly suffering flame burns (87.4%). 16.2% had full-thickness burns. Mortality was 13.1%, with 32.5% developing AKI, 20.4% sepsis, and 13.1% liver dysfunction. Significant mortality predictors were serum albumin ( $HR=0.229$ ,  $p=0.004$ ) and Plt/Lymph ratio ( $HR=0.918$ ,  $p=0.04$ ). The Kaplan-Meier curve also showed significant mortality in hypoalbuminemic patients ( $p=0.043$ ). In contrast, physical variables such as TBSA, rBAUX, and ABSI were not significantly associated, with age being the only significant physical predictor (adjusted  $HR=1.054$ ,  $p=0.022$ ) of mortality. ROC analysis showed serum albumin ( $AUC=0.76$ ;  $p<0.0001$ ), and Plt/Lymph ratio ( $AUC=0.75$ ;  $p<0.0001$ ) as strong predictors. LOS was significantly influenced by full-thickness surface area, ABSI score, serum albumin, and hepatic markers.

**Conclusion:** Biochemical markers, particularly serum albumin and the Plt/Lymph ratio, are valuable in predicting mortality and adverse outcomes in burn patients highlighting their importance in early triage and management decisions.

## Outcome and Efficacy of Meek Micrografting in Pediatric Burn Wound Management: A Case Report

Shumaila Dogar

### ABSTRACT

Burn injuries can have devastating consequences, where prompt and effective treatment is crucial to minimize long-term morbidity and optimize functional and aesthetic outcomes along with achieving complete healing of wounds is a challenge altogether especially in full thickness deep burn wounds, particularly in pediatric population where donor site availability to harvest skin for mesh grafting is rather limited. This case report details the successful application of MEEK micrografting technique, a revolutionary skin grafting technique, involving harvesting and expanding small skin samples to cover large burn areas, at BURN UNIT of MAYO HOSPITAL LAHORE. The detailed clinical course, challenges encountered during treatment, and the outcomes, including wound healing and functional recovery, are discussed. The report highlights the importance of this technique in pediatric burn care, offering insights into its role in improving patient prognosis.



## Amniotic Membrane Dressing in Burn; The Hidden Blessing

Shazia Khalid

## ABSTRACT

**Background:** There is different type of dressings available to treat burn yet burn is still a challenging accident to manage. Revisiting the old ancient method of dressing is need of the time of modern era.

**Methodology:** Study was done at Patel hospital over a period of 1 year. Amnion was separated from elective C-section placentas. The study includes 10 cases of fire burn and scald burn.

**Results:** 10 patients were of thermal and scald burn injury. Mean score of pain and appearance of granulation tissue were earlier and less consumption of analgesic meds. Hence decreased risk of infection

**Conclusion:** It seems the use of amnion dressing over burn wound cause early desloughing and appearance of granulation tissue.

## Frequency and outcomes of Auricular Perichondritis in Facial Burns – A cohort

Osheen Abbasi, Wahaj Arshad, Mazhar Nizam, Zuhera Khan, Ghulam Murtaza

Plastic surgery department, Patel Hospital, Karachi, Pakistan

## ABSTRACT

**Objective:** To determine the frequency of auricular perichondritis (APC), critical time for its development in patients with facial burns, risk factors and its outcomes (healing, colour change, ear shape deformity).

**Results:** In a study involving 53 patients, 38 individuals (71.7%) developed auricular perichondritis following facial burns. The most common type of burn was fire-related, affecting 49 patients, of whom 35 (92.1%) subsequently developed auricular perichondritis. When analysing the burn extent, auricular perichondritis occurred in 10 out of 70 ears (14.3%) with superficial burns, 25 out of 70 ears (35.7%) with full-thickness burns, and 35 out of 70 ears (50%) with mixed-thickness burns. Furthermore, 31 patients (58.5%) exhibited symptoms of auricular perichondritis within one week of the initial burn, while 7 patients (13.2%) reported onset within two weeks. The relationship between auricular perichondritis and the depth/extent of burns in the ears was statistically significant, with a p-value of <0.0001.

**Conclusion:** The occurrence of auricular perichondritis (APC) is particularly prevalent in patients with deep burns, with a significant increase in onset during the first week following the injury. Full-thickness and mixed burns are particularly linked to shape distortion of the ears, whereas superficial burns typically heal completely. Chondritis and ear deformities are serious complications associated with auricular burns. While chondritis is irreversible, timely and effective management of the burned ear, along with early detection, can help lessen the severity of resulting deformities. Preventing chondritis is the most effective strategy to avoid deformity, as the affected ear cannot return to its normal shape once damaged.

**Keywords:** auricular perichondritis, ear burn, fascial burn, chondritis, deformity.

## Comparison of Outcome of Early Tangential Excision with Autografting Versus Interactive Antimicrobial Dressing in Deep Partial Thickness Burn Patients: A Retrospective Analysis

Minahil Saifullah , Muhammad Sohail, Muhammad Mustehsan Bashir, Sana Saeed, Umer Nazir

## ABSTRACT

**Objective:** To compare the outcome of early tangential excision and autografting (EG) to initial non-operative (INO) treatment using interactive antimicrobial dressing.

**Methodology:** Records of 106 adult burn survivors with predominantly deep-partial thickness thermal burns of TBSA  $\leq 30\%$  were retrospectively reviewed (53 patients each in EG-arm and INO-arm). EG-arm patients underwent excision and autografting within 7 days. INO-arm patients, who had opted against surgical excision, received interactive antimicrobial dressing (hydrofiber with ionic silver). Outcomes measured include percentage of wound healed on days 14 and 21, days to complete wound healing, duration of hospital stay, complications (on 12 months' follow-up) and patient satisfaction scores. Patients were analyzed as treated.

**Results:** Patients in each arm had similar TBSA and demographic profiles. In EG-arm patients, 15–20 % of TBSA were grafted on  $5.02 \pm 0.71$  post-burn day. Thirty percent of EG-arm patients required a second session of grafting for the remaining burn wound, which occurred on  $6.873 \pm 0.34$  postburn day. On the 21st post-burn day the EG-arm, compared to the INO-arm, had a higher percentage of wound epithelization ( $98.60 \pm 4.03$ , versus  $76.16 \pm 7.02$ ,  $P < 0.01$ ), less days to complete healing ( $17.60 \pm 5.83$ , versus  $40.16 \pm 9.09$ ,  $P < 0.01$ ), and shorter hospital stays ( $19.62 \pm 6.85$  days, versus  $35.56 \pm 7.77$  days,  $P < 0.01$ ). Twenty-five (47 %) INO-arm patients underwent delayed grafting on post-burn day  $25.42 \pm 0.49$ . The INO-arm suffered significantly more complications, such as hypertrophic scar, dyspigmentation and functional disability ( $P < 0.05$ ). EG-arm patients were more satisfied than INO-arm patients ( $P < 0.01$ ).

**Conclusion:** We report superior outcomes in the early tangential excision and autografting-arm as compared to the initial non-operative treatment arm. The dogma of early excision and autografting remains valid despite significant advances in wound dressing materials.

## Enhancing Comprehensive Burns Care in Pakistan: Insights from Capacity and Capability Building Initiative

\*Amna Noreen<sup>1,2</sup>, Amy Blakemore<sup>3</sup>, Zainab F. Zadeh<sup>1</sup>, Zahra Nigah<sup>1</sup>, Ameer B Khoso<sup>1,2</sup>, Rakhshi Memon<sup>4,5</sup>, Nasim Chaudhary<sup>1</sup>, Maria Panagioti, Nusrat Husain<sup>8,9</sup>

1. Pakistan Institute of Living and Learning, Karachi, Pakistan
2. Division of Population Health, Health Services Research and Primary Care, University of Manchester, Manchester, United Kingdom
3. Division of Nursing, Midwifery and Social Work, School of Health Sciences, Faculty of Biology, Medicine and Health, University of Manchester, Manchester Academic Health Science Centre, Manchester, United Kingdom
4. Department of Science and Technology Studies, University College London, London, United Kingdom
5. Manchester Global foundation, Manchester, United Kingdom
6. Division of Population Health, Health Services Research and Primary Care, National Institute for Health and Care Research Greater Manchester Patient Safety Translational Research Centre, University of Manchester, United Kingdom.
7. Division of Population Health, Health Services Research and Primary Care, Institute for Health Policy and Organisation/Alliance Manchester Business School
8. Division of Psychology and Mental Health, University of Manchester, Manchester, United Kingdom
9. Mersey Care NHS Foundation Trust, United Kingdom

### ABSTRACT

**Objective:** Our aim is to develop sustainable capacity and capability in the treatment and rehabilitation of burns, alongside strengthening research to improve burn care. This involves implementing annual self-assessments for hospital burn units using the Interburns Delivery Assessment Tool (DAT) and providing specialized education to improve burn management and rehabilitation. Fellowships at Interburns Training Centres offer Pakistani healthcare professionals the opportunity to learn best practices internationally. Additionally, we include training and supervision for new burn case managers in psychosocial interventions linked with our randomised controlled trial, research capacity development across Pakistan, and the provision of three PhD studentships in health economics, mental health, and policy.

Our program has achieved considerable milestones, including DAT self-assessments across 7 burn units in Pakistan, introductory seminars, and structured DAT focus groups. A series of nationwide roadshows and community awareness events have reached over 1,300 participants, educating them on burn prevention, first aid, and immediate burn care practices. The inaugural National Burns Day, held at Pakistan Institute of Medical Sciences (PIMS), Burn center, Islamabad, marked a pivotal moment in public awareness. Specialized Malawi Advanced Burn Care nursing training, and we have collectively trained 1,908 healthcare professionals and researchers from 2022 to 2024.

**Conclusion:** Our work to date has significantly advanced burn care capacity in Pakistan through targeted training, assessment, and public awareness initiatives. This model provides a scalable framework for enhancing burn care in resource-limited settings, aiming for sustained improvement and wider impact.

## Neutrophil Count: A Reliable Prognostic Factor in Burns Patients

Adila Kakar, Mazhar Nizam, Zuhera Khan, Hafeez ur Rehman, Aaqil Shah

Department of Burns and Plastic surgery, Patel hospital, Karachi

### ABSTRACT

**Objective:** To compare the non survival burns group with significantly raised neutrophil count to the survival burns group. The lymphocyte ,white blood cells and PCT were also measured.

**Methodology:** This study was a retrospective cohort study conducted at burns center Patel hospital ,Karachi from 1st Jan 2024 to 31 Aug 2024. Burns of all kinds with TBSA 10-90% were included in the study. There were a total 139 burn patients. Individuals with burn injury > 48 hours and missing data were excluded from the study. Only 79 burn patients were included in the study. The neutrophil and lymphocyte count were evaluated within 48 hours of burn injury. The neutrophil count was verified by using a medical record number of the patient, from the cbc report available online.

**Results:** Mortality was observed in patients with higher neutrophil and lymphocyte count than the survival group.

**Conclusion:** The findings indicated that the neutrophil in the first 48 hours of burns could be a reliable indicator of burns patient prognosis.

## Pregnancy Outcomes in Burn patients; A 15-year study

Sara usman<sup>1</sup>, Zeenat Usman<sup>2</sup>, Haifa khan<sup>3</sup>, Ashir Khalid<sup>4</sup>, Faryal Ali<sup>5</sup><sup>1</sup>Postgraduate resident gynecology and obstetrics\*<sup>2</sup>Medical officer gynecology and obstetrics\*<sup>3,4,5</sup>House officer\*

\*Pakistan institute of medical sciences

## ABSTRACT

Objective: To find our local trends and to determination the best possible management in pregnant patients with burn injuries.

Methodology: The Retrospective cohort study

data was collected from MCH and burn center of Pakistan Institute of Medical Sciences, Islamabad for a period of 15 years and 5 months from May 2008 to October 2024. Ethical approval was taken. A structured questionnaire was filled and the alive patients and their babies followed.

Results: All patients presenting to pims managed under multidisciplinary care were recruited from ever since the birth of burn center a total of 33 patients. The range of age was from 20 to 45yrs mostly presenting in between 21to30yrs, with passing years the patient load is increasing at pims maximum in 2020-2023 and least in 2008-2011. Patients presented equally with all trimesters 11 in first trimester, 10 in second trimester and 12 in third trimester. The distribution of TBSA were <30% (10), 30-50% (5), 50-70 % ( 7) and >70 % ( 11). Types of burn flame (25) scald (3) chemical (1) and electric (4). Mode of burn accidental (32) and suicidal (1). no homicidal patient was present. We were able to save 39% of the mothers. 15% pregnancies were continued, 24% ended in spontaneous expulsion 21% in a NVD 3% in LSCS and 10% not applicable. 30% alive birth 39% expired and 10% not applicable. Younger mothers had better fetal survival rates. With the passing years alive birth rate is improving and so is alive maternal survival patients. The higher the TBSA more high the mortality rate in the mother <30% (9 alive 1 expiry), 30-50% (2 alive 3 expired), 50-70 % ( 1 alive 6 expired) and >70 % ( 1 alive 10 expired). The higher the TBSA more higher mortality rate in the fetus <30% (7 alive 0 expiry), 30-50% (2 alive 3 expired), 50-70% (1 alive 4 expired) and >70% (0 alive 6 expired). Management of mothers with no intervention (1 alive 10 expired) with supportive therapy (5 alive and 4 expired) termination of pregnancy (0 alive 1 expired) and with Fetomaternal surveillance (4 alive and 3 expired) and delivery of fetus (3 alive 2 dead). management strategies on fetal outcome no intervention (0 alive 9 expired 2 not applicable) with supportive therapy (1 alive and 8 not applicable) termination of pregnancy (0 alive 1 expired) and with Fetomaternal surveillance (4 alive and 3 expired) and delivery of fetus (5 alive).

Conclusion: It was found out that with coming years the patients were better managed by having multidisciplinary care .PIMS is about to become a center of excellence of care for pregnant women presenting with burns. Supportive therapy by obstetrician is better for good maternal outcomes in first and second trimester. In third trimester it is best to deliver fetus as soon as reasonably possible.

Key Words: Maternal mortality, TBSA, Fetus.

## Awareness About Initial Management of Burn Among Doctors in Children Hospital, PIMS - SZAB Medical University, Islamabad, Pakistan

Ali Mujtaba, Muhammad Hassaan Tariq, Shehroz Zafar, Tariq Iqbal, Muhammad Ibrahim, Nimrah Komal

Burn and Reconstructive Surgery, Burn Care Centre

SZAB Medical University, PIMS, Islamabad, Pakistan

## ABSTRACT

Introduction Burn related injuries account for one of the major reasons for coming to hospital. Initial assessment and management of injuries can reduce child morbidity and mortality dramatically which is significant in third world country.

Objective: This study aims to assess awareness of burns related injuries and its initial management among doctors of children hospital, Pakistan Institute of Medical Sciences (PIMS)-Shaheed Zulfiqar Ali Bhutto Medical University (SZAB Medical University), Islamabad, Pakistan. In way to identify weakness so knowledge and training can be provided to doctors Key Words: Maternal mortality, TBSA, Fetus.

Methodology: This cross-sectional study was conducted from January to February 2024 in Children Hospital PIMS, survey population included the House Officers and Post-Graduate trainee. Questionnaire designed focus on the identification of burn injuries and management in both hospital and non-hospital setting. Results were analyzed on Microsoft excel.

Results: A total of 78 entries were included in this study. 47% of doctors could identified 1st degree burn and only 18% could provide treatment, 28% could identified 2nd degree burn and only 21% provide treatment, 23% identified 3rd degree burn and only 12% could provide treatment. Only 38% had knowledge about fluid resuscitation. 35% were aware of most common burn. 53% of doctors lack awareness about Lund and Browder chart and the actual distribution of burn in children.

Conclusion: The results in this study show that the doctors in our setting lack basic knowledge related to burn injuries. Training program must be designed to include identification and management of burn injuries. This will not only decrease the burden on the few burn centers available but also help in developing more first aid centers in other hospitals saving numerous lives.

## Prevalence and Antibiotics susceptibility of MRSA in infected Burn Wound at Burn Care Centre, PIMS, Islamabad, Pakistan

**Ali Mujtaba, Muhammad Hassaan Tariq, Shehroz Ashraf, Prof Dr Tariq Iqbal, Muhammad Rehan, Muhammad Ibrahim**

Burn Care Centre, Shaheed Zulfiqar Ali Bhutto Medical University, PIMS, Islamabad, Pakistan

### ABSTRACT

**Introduction:** According to WHO 180,000 deaths occur every year due to burn injuries and majority of the victim belong to low and middle income countries. Due to loss of skin in burn injury, patients become immune-compromised and are more prone to infections. MRSA is a major cause of infection in hospitals worldwide and is also an endemic in burn units. Irrational use of antibiotics has caused pathogens to developed resistance over time.

**Methodology:** Observational Descriptive Study was conducted in Burn Care Centre (BCC), Pakistan institute of medical sciences, Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad from February 2023 to July 2024. Patient of all age group, gender and types of burn were included in our study. Total of 458 swab culture were collected from patient who showed sign of infection.

**Results:** Total 250 (55%) were male patients, 208 (44%) were females and 180 (40%) were children. Among 458 samples 122(27%) samples revealed no growth. 183(40%) swab culture were positive for pseudomonas which is the most common. 108(23%) were positive for Klebsiella pneumoniae. Only 45 cultures were positive for MRSA which account for 10%. MRSA showed 100% sensitivity to both Vancomycin and Linezolid. Chloramphenicol was 81.4% and Doxycycline was 61.4% sensitive. Ciprofloxacin was 22% while Clindamycin was 18% sensitive. Penicillin, Ceftriaxone, ceftazidime, Oxacillin, Piperacillin and Tanzobactam showed no sensitivity to MRSA.

**Conclusion:** Our study showed prevalence of MRSA in our unit with sensitive to vancomycin and linezolid. Low incidence of antibiotic resistance due to judicious use of antibiotics, maintenance of antibiogram and following aseptic technique.