

## Commentary

### Challenges in Managing Geriatric Burn Patients

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#### Abstract

Burns are one of the most common and devastating injuries worldwide. Its effects are more pronounced especially among older adults who undergo physical and functional changes. Furthermore, burn injuries require surgical management increasing metabolic demands which poses challenges in the geriatric population. Early rehabilitation is imperative in order to achieve restoration of function amidst the challenges and complications.

**Keywords:** Burn; Early rehabilitation; Geriatric population

#### Introduction

Burns are considered as the leading cause of injury worldwide, mostly in low to middle income countries including Southeast Asian countries, such as the Philippines. Those who are aged 35-54 years old are mostly affected by the burden of disease [1]. However, it is important to consider the impact of burn injuries towards the geriatric population. Burn injuries impose functional demands in the body. Needed surgical management requires increased metabolism to ensure good output. As such, the geriatric population becomes more vulnerable compared to a younger adult as they already experience decline in terms of physical, metabolic and physiologic processes.

#### Physiologic Changes in Geriatric Patients

Adults undergo physiological decline in function with age. The decline in function mirrors the organ system's deterioration. Decreased heart contractility, stiffening of arteries with resulting elevated blood pressure, and decreased cardiac efficiency may lead to eventual diseases such as infarction, stroke and death. The loss of airway elasticity and respiratory muscle weakness may result in difficulty clearing

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mucus and pulmonary decline. Changes in the gastrointestinal system leads to poor appetite and metabolic imbalances. While the presence of sarcopenia, and osteoporosis, increase the risk for deconditioning, falls, injuries, and pain. The decline of neurologic function may manifest as cognitive decline. Skin thinning prolongs the healing process, which is detrimental among patients with burn. In the presence of multiple comorbidities, there is compelling need for polypharmacy, which increases the risk of accidents and hence further decline in a geriatric body [2].

#### Aging and Burn

Because of the complexity of changes in older adults, this heterogeneous population is prone to burn injuries. Elderly patients are less mobile and slower to react and reach safety. This may be due to their impaired vision, decreased coordination and effects of polypharmacy [3]. While the younger population show improved survival rates due to improved management for burn injuries, advanced age is still a major predictor for morbidity and mortality, especially among admitted patients [4]. While advancements in medical management have dramatically decreased the mortality rate, admitted geriatric burn patients have not improved significantly due to age-associated decreased immune responses [5].

Furthermore, burn patients are noted with hypermetabolic states which increases incidence of hyperglycemia, insulin resistance and diabetes. While recent studies show positive correlation with pre-existing diabetes and worse clinical outcomes, it is important to note that insulin regulates inflammatory and immune responses [6]. Thus, impairment in regulation may further slow down the healing process in burn patients. Moreover, wound healing is important in recovery after burn injury. In geriatric patients, there is note of prolonged or impaired wound healing which predisposes patients to various clinical problems such as inhibited wound closure and infection, among others [7].

#### Burn Rehabilitation in Geriatric Patients

In the case report published by the authors, it was noted that while early mobilization and rehabilitation is essential for burn patients, bilateral partial calcaneotomy, physical changes, and physiologic decline in an elderly patient were important factors that were carefully taken in consideration in the provision of rehabilitation strategies [8]. Despite these challenges, it was noted that early rehabilitation was beneficial in ensuring functional recovery for the patient. Early physical activity has shown improvements in ambulation and prevention of falls. These are important as complications of immobility are more evident and occur at a faster rate among the elderly population [9].

Another important element of rehabilitation is the provision of psychological assessment, care and support for burn patients to address psychosocial concerns. Adjustment disorders, depression and posttraumatic stress disorder are common after burn injuries and more pronounced among the elderly. These can arise from body image issues, feelings of dependence and financial challenges [10]. Finally, knowledge on the benefits of rehabilitation must be explained well to

geriatric patients as this can greatly improve their outlook in life and adherence to therapy programs. Therefore, proper communication on goal setting should be established well between the patient and the medical care providers.

## Conclusion

Geriatric burn injuries are often overlooked conditions. Despite several bodily and psychological concerns, a multimodal early intervention promotes positive outcome. Hence the need to emphasize collaboration among burn rehabilitation team members. While there is a need to drum up awareness and disseminate to other medical professionals the importance and benefits of burn rehabilitation among older adults.

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