

BURNS IN CHILDREN AND ADOLESCENTS IN ALBANIA: CAUSES, CLINICAL COURSE, AND IMPACT

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Abstract: Burns in children and adolescents represent one of the most frequent and serious traumas in this age group, with significant effects on morbidity and mortality. Children are especially vulnerable due to their smaller body surface area, faster metabolism, and reduced resistance to complications. In countries with limited resources, including Albania, most injuries occur in domestic environments and are closely linked to insufficient preventive measures.

This retrospective cohort study was conducted at the Burn and Plastic Surgery Service, University Hospital Center “Mother Teresa,” between January 2021 and January 2024. The objective was to analyze the demographic and clinical profile of hospitalized children and adolescents with burns, the main causes, the severity of injuries, and the impact of these traumas on health outcomes. In total, 157 cases were examined using hospital records, with formal approval from the Ethics Committee. Data were processed in Excel and analyzed with SPSS.

The mean patient age was 4.06 years. The most affected group was 0–10 years (53 cases), with a peak around age 2. The youngest was 7 months, and the oldest 17 years. Of the patients, 61.1% were male and 38.9% female. The overall mortality rate was 8.31%, with 2 children dying due to severe burn complications.

Hot liquids, especially water and milk, were the leading cause, accounting for 74.6% of injuries. Fire and flames were responsible for 13.6%, electrical burns for 1%, while chemicals and other causes made up 10.8%. The average burned body surface was 25.3%, ranging from 5% to 65%. Most children (73%) sustained burns affecting less than 20% of TBSA, while 21% had 21–40%, 4% had 41–51%, and 2% had over 55%.

The distribution of burns by body region showed extremities as the most affected (33%). This was followed by combined injuries such as extremities + trunk (23%) and extremities + face (15%). Trunk-only burns were present in 20% of cases, genital burns in 7%, and face-only burns in 6%. More complex combinations, including scalp and neck involvement, made up around 10%.

The study emphasizes the urgent need for preventive strategies and awareness campaigns aimed at parents and communities. For Albania, strengthening safety standards in households, expanding education on common risks, and providing timely access to specialized treatment remain critical. In addition, psychosocial support for affected children and families plays an essential role in recovery. Prevention, high-quality healthcare, and consistent public information efforts together can substantially reduce the impact of burn injuries on this vulnerable age group.

Keywords: burns, trauma, total body surface area, causes of burns, extremities, mortality.

1. INTRODUCTION

Burns in children and adolescents represent one of the most frequent and serious traumas in this age group, significantly affecting morbidity and mortality. The child’s body is more vulnerable to burn injuries due to its smaller body surface area, faster metabolism, and lower resistance to complications. In low- and middle-income countries, such as Albania, these injuries often occur in household environments and are associated with the lack of preventive measures.

This retrospective study aims to analyze the demographic and clinical characteristics of children and adolescents hospitalized with burns, identifying the main causes, the degree of severity, and the impact of these traumas on their health. This retrospective cohort study was conducted at the Burn and Plastic Surgery Service, University Hospital Center “Mother Teresa,” during the period January 2021–January 2024. The study aimed to evaluate the demographic and clinical characteristics of burn patients, to analyze the causes and severity of burns, and to assess the types of burn injuries treated at the hospital center. Among the patients included in the study, the mortality rate was 8.31%, with 2 out of 157 patients dying due to burn injuries. The study findings highlight the need for preventive strategies and awareness initiatives focused on children and adolescents, underlining the vital role of specialized burn clinics in treating this vulnerable age group.

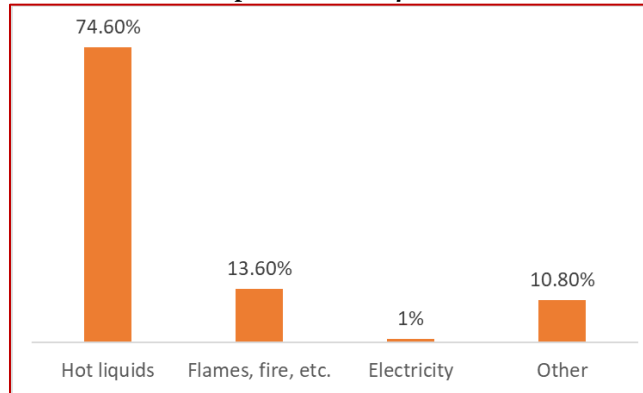
2. MATERIALS AND METHODS

In this cohort study, 157 children and adolescents admitted to the Burn and Plastic Surgery Service, University Hospital Center “Mother Teresa,” between January 2021 and January 2024 were analyzed. Data collected included

demographic characteristics, causes of burns, percentage of total body surface area (TBSA) burned, burn degree, affected body areas, and burn agents. Medical records from the service were used as the primary data source. Formal approval was obtained from the Hospital Ethics Committee. Data were recorded in Excel and analyzed using SPSS software.

3. RESULTS

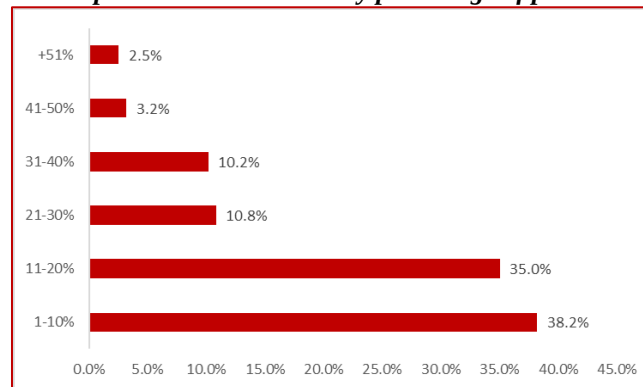
Graph 1. Causes of burns



Source: Authors' research

The main causes of trauma were burns from hot liquids, such as water and milk, which accounted for 74.6% of cases. Burns from fire or flames were reported in 13.6% of cases, while electrical burns made up 1%. The remaining 10.8% were related to chemical burns and other causes.

Graph 2. TBSA burn area by percentage of patients



Source: Authos' research

The average TBSA burned was 25.3%, ranging from 5% to 65%. Most patients (73%) had burns affecting less than 20% of TBSA. Additionally, 33 patients (21%) had burns covering 21–40% TBSA, 5 patients (4%) had burns covering 41–51%, and 3 patients (2%) had burns covering more than 55% TBSA.

Regarding body areas, extremities were the most affected (33%), followed by combinations such as extremities + trunk (23%) and extremities + face (15%). Burns in the genital area occurred in 7% of patients, while combinations involving extremities, face, and neck accounted for 9%. Burns affecting the scalp and other areas represented 10% of cases. Trunk-only burns were reported in 20% of patients, facial burns in 6%, and other rarer combinations in 4%. The mortality rate was 8.31%, with 2 out of 157 patients dying due to burn injuries.

4. DISCUSSION

The findings of this study are consistent with international literature, which identifies young children as the most vulnerable group to burn injuries due to their dependency, lack of awareness of danger, and increased exposure to household risks. The predominance of scald injuries from hot liquids mirrors global patterns, especially in low- and middle-income countries, where kitchen accidents and unsafe household conditions remain common. The high

proportion of burns affecting extremities underscores the typical mechanisms of injury, where children reach for hot objects or spill liquids on themselves. The relatively high incidence of trunk and face involvement further increases the risk of long-term disability, scarring, and psychological consequences.

The average burned TBSA (25.3%) and the presence of severe cases above 40% TBSA highlight the clinical burden of these injuries. Although mortality was relatively low compared to some regional data, every loss of life in this young group is significant and preventable. The results underline the urgent need for targeted prevention strategies, including public education campaigns, parental training, and stricter safety regulations regarding hot fluids and fire hazards in households.

Specialized burn centers such as the University Hospital Center “Mother Teresa” play a crucial role in improving outcomes. However, resources must be combined with early referral systems, community-level first aid education, and psychosocial rehabilitation to ensure holistic recovery.

5. CONCLUSIONS

The study data emphasize that preventive initiatives and awareness programs are the most effective interventions to reduce the incidence of such injuries. For Albania, the priority remains strengthening safety measures in household and public environments, educating parents and communities about common risks, and ensuring timely specialized treatment. Only through a combination of prevention, quality healthcare, and psychosocial support can the real impact of burns on children and adolescents be reduced. The implementation of continuous awareness campaigns and the strengthening of safety regulations can play an important role in addressing this public health issue.

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