Critical Burn Injury in Young Children: A New Challenge of Success

R.J. Lodescar MD, A. Rabbitts MS,RN, P.Q. Bessey, MD,FACS,MS
New York-Presbyterian/Weill Cornell Medicine, New York, NY

Introduction

Critical burn injuries in young children now happens rarely, thanks to many prevention efforts.

The challenge that presents is that neither most burn center teams (BC) or pediatric critical care teams (PICU) have sufficient experience to maintain broad expertise in the care of these uncommon but vulnerable patients.

Several years ago our BC team and PICU team agreed to co-manage these patients no matter where they were admitted in the hospital. Where the patient is housed in the hospital (BC or PICU) is a secondary but joint decision, guided by the clinical needs of the patient and not by the preference of the team 'in charge' of the unit.

In Co - directed pediatric burn cases, senior members of both teams consult either on a referral call or before the patient's arrival. Both teams round together on the patients, and most clinical decisions are made jointly. The burn team performs wound care with bedside caregivers from the PICU as needed.

The purpose of this report is to review the results of this cooperative approach.

Methods

We reviewed all pediatric admissions (age 0 to 15 years) admitted with acute burn injury from October 2015 – September 2019.

We further identified those who were Co-directed with the PICU.

Data were analyzed with SAS 9.4 and are expressed as Mean ± SEM. Differences in means were tested for significance with T-Test and Chi Square.

Results

There were 799 patients admitted with burn injuries over the four-year period. Twenty-seven of them (3.4 ± 0.6 %) had a portion of their care Co-directed.

- These were older than all other pediatric cases (4.9 ± 0.7 years vs 3.2 ± 1.5, p=0.03).
- They had larger mean burn size (20 ± 7 % TBSA vs 4 ± 0.2, p=0.03).
- They more often had inhalation injury (40.7 ± 9.6 % vs 0.9 ± 0.3, p<0.01).
- The length of stay of the co-directed patients was longer than the other cases (14 ± 3 days vs 5 ± 1, p<0.01).

Only two patients died: a four-year old with cardiac arrest at the scene from inhalation injury and a three-year old with inhalation injury and a deep burn > 80% TBSA.

Conclusion

Critical burn injuries happen uncommonly in young children. They challenge burn centers, because they are unusual, and it is difficult for the burn team or the PICU team to maintain expertise in all aspects of their care.

A cooperative, co-directed patient care model with both the BC and PICU teams may serve to provide optimal care to these infrequent but vulnerable patients.

References, Disclosure

Disclosure: None Funding: None