



Diarrhoea in Paediatric Burns: a clinical challenge

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Introduction

- Diarrhoea complicates most major burns in the paediatric population
- Dressings can be soiled, nursing requirements increase, patient discomfort rises and nutritional status, and therefore burn healing, can be affected
- According to current literature, osmotic effects of feeding regimes is thought to be the most likely cause [1]
- Intolerance to feeding is associated with increased mortality in this population [2]
- C. diff infection during hospitalisation is associated with greater mortality in paediatric patients and should be recognised early [3,4]

Method

- An audit of all patients managed by the unit between 2000 and 2016 with burns >30% TBSA was undertaken
- Exclusion: hospital length of stay < 7 days

Results

Patients that met inclusion criteria	26
Patients with diarrhea	23
Range of days of diarrhea	1-10
Range of starting day	2-21
Mean starting day	13.9
Most common mode of feeds at time of diarrhea	Enteric (22/23)
Mean day NG feeds started	1.53
Mean oral feeds introduced	51.08
Patients that had stool cultures done	15
Patients with positive stool cultures	11

Day 1.53 -
NG Feeds
commenced

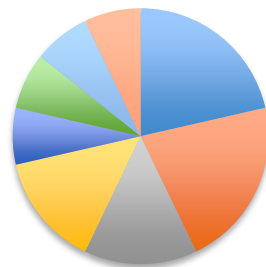
Day 13.9 -
Diarrhoea
starts

Day 51.1 -
Oral feeds
commenced

Discussion

- 23 of the 26 patients that met the inclusion criteria developed diarrhoea during their stay (88.5%)
- As diarrhoea was often prolonged, maintaining appropriate nutrition and hydration was challenging
- Dressing care was also made more difficult
- No patients were treated with anti-diarrhoeal agents
- In contrast to other studies in the literature, there appeared to be little correlation between feeding regimen and diarrhoea, with diarrhoea often appearing ~12 days post commencement of NG feeds
- 15 patients had stool cultures performed, with 11 returning positive results. Numerous different organisms were identified, including Clostridium Difficile:

Infectious agents associated with diarrhoeal illness



- Clostridium Difficile
- Adenovirus
- Rotavirus
- Campylobacter
- Norovirus
- Pentrichomonas Hominis
- Giardia
- Blastocystis Hominis

Outlook

Diarrhoea in paediatric patients with major burns remains a challenging and vexing clinical concern. In contrast to other studies, our audit reveals less of a clear correlation between feeding and diarrhoea and that infectious agents may play a greater role than previously thought.

Whilst beyond the scope of this audit, it was also noted that a period of constipation immediately post injury and lasting for several days, often preceded the development of diarrhoea. This observation poses the question of the role of traumatic ileus and gut oedema in pathology of diarrhoea in major burns.

Further research is required to fully understand the pathology of diarrhoea on major paediatric burns and how best to treat it.

Conclusions

- Diarrhoea complicates the majority of paediatric major burns
- A less clear correlation between feeding and the development of diarrhoea was found in our study.
- Infectious agents may have a greater role than originally hypothesized in paediatric burns

References

1. Thakkar, K et al. "Diarrhea In Severely Burned Children." *JPEN* 29.1 (2005): 8-11.
2. Wolf, Steven E. "Enteral Feeding Intolerance." *Archives of Surgery* 132.12 (1997): 1310.
3. Finnerty, Celeste C. et al. "Morbidity And Mortality In Severely Burned Children With Clostridium Difficile - Associated Diarrhea." *Surgery* 159.6 (2016): 1631-1637.
4. Still, Joseph et al. "Clostridium Difficile Diarrhea On A Burn Unit." *Burns* 28.4 (2002): 398-399.