

The versatile use of a Cyanoacrylate* skin protectant in managing skin damage in a community hospital setting


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INTRODUCTION

Skin damage is a common occurrence in any inpatient hospital setting, though the causes of such damage may itself be quite diverse. Damage to skin though usually not life threatening, can lead to quality of life issues, and can sometimes complicate treatment. Wound dressings, barriers, and solvent based skin barriers have all been used to protect and manage skin damage; though in our experience there are situations when these traditional methods of managing skin issues do not work. For example, the management of severely denuded skin around ostomies is very difficult in some patients. The skin damage is caused by fecal effluent and adhesive removal trauma. We report the versatility of a cyanoacrylate based skin barrier that demonstrated protection in a series of challenging patients.

We have seen emerging clinical presentations on the use of a cyanoacrylate based product in the management of damaged skin, and decided to evaluate this product on our population over a period of weeks.

METHODS

A convenience sample of patients was chosen, the skin damage managed by application of the cyanoacrylate product. Upon enrollment in the study, we assessed the extent of the skin damage on a numerical scale, and then applied the cyanoacrylate per the instruction for use, taking care not to over-apply the product. In each case, the product was applied on skin that had been patted dry with gauze, and allowed to cure. The numerical score on the extent of skin damage was monitored as a function of time. The skin barrier was reapplied as needed. Photographic images were captured.

The skin damage studied in the patients were classified as: blisters, skin tears, peristomal site, abrasions, and macerated periwound area under NPWT (negative pressure wound therapy) dressing.

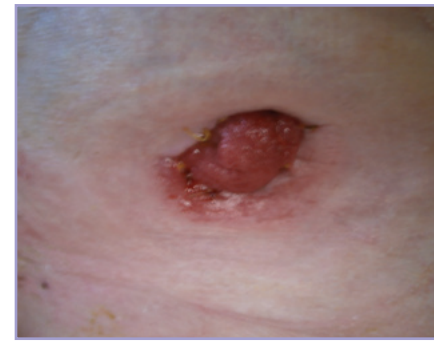
Risk assessment to damaged skin area was evaluated according to a 5 point scale ranging from very low (1) to very high (5).

CASE EXAMPLES:

SAW is 66 year old white female who presented with a toxic megacolon, (with *C. Difficile*). She underwent a right hemicolectomy with permanent poorly placed ileostomy, which had high output. The peristomal skin became denuded and the cyanoacrylate was applied to the area. Comorbidities include: hyponatremia, and kidney disease. SAW was discharged with effective pouching system.



Peristomal



5 days later

HJT is a 77 year old male who presented with a skin tear to his lateral thigh. The cyanoacrylate was applied, no further dressing needed. Comorbidities include : obesity, congestive heart failure and insulin dependent diabetes.

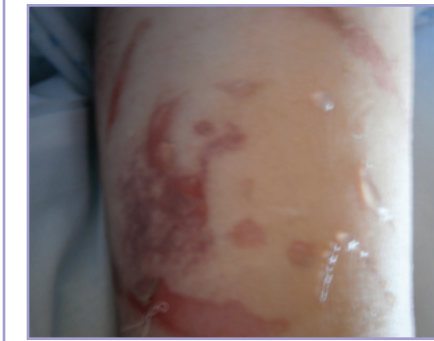


Skin Tear

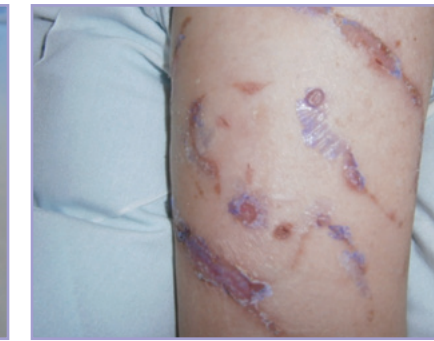


10 days later

JLR is a 62 year old female who was admitted with degenerative disc disease. She went into respiratory failure requiring mechanical ventilation. She developed anasarca which caused tension blisters and denudement from the dressing. The cyanoacrylate was applied and no other dressing was used. Her comorbidities include: acute respiratory distress, shock, electrolyte imbalance.



Denuded Skin



5 days later

DISCUSSION

We present the data from cases that are quite diverse. We report that tracking of skin scores showed that the cyanoacrylate was successful in protecting the skin from further breakdown, and resolution of skin damage was seen in all cases over relatively few product applications. The highest number of applications required was three, within two weeks for total resolution of skin damage. In each case, the patient skin responded within days of initial application, and the curing of the product on skin occurred within two minutes and did not produce any pain response such as stinging or any other adverse event. The product stayed on for several days on all patients needing replacement on an average of once every three days, which is consistent with the instructions for use. The vial in which the product is delivered is small and covers an area approximately 4 inch X 4 inch. Larger sized vials would be more appropriate in the application of the product in managing skin damage over a more extensive area.

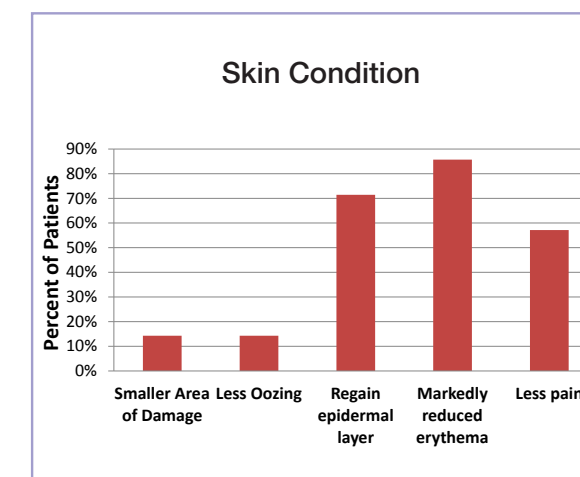
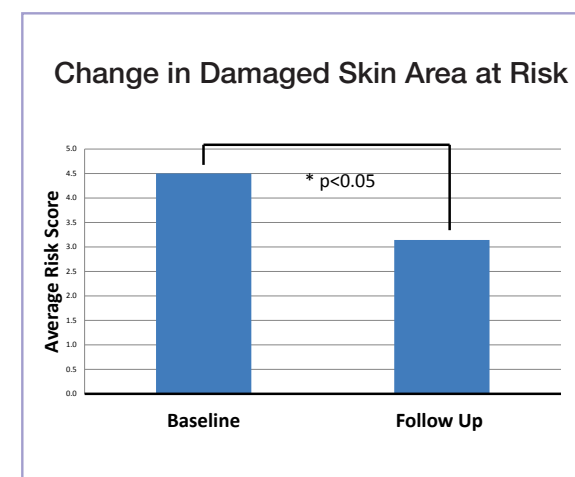
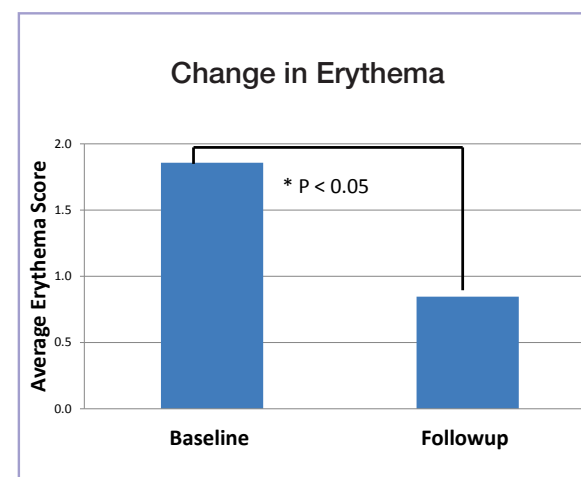
We continue to use the cyanoacrylate products for above listed skin concerns, skin tears being the commonly managed damaged skin condition. This is primarily due to the ease of application and the fact that once in place; the barrier does not need another secondary dressing.

CONCLUSION

Three (3) to 10 days following the initial cyanoacrylate skin protectant application, damaged skin was reassessed. Improvements in skin damage was observed for all patients with marked improvements noted in erythema, epidermal layer, and risk to damaged area. Cyanoacrylate skin protectant application was without pain and more than 50% of patients experienced less overall pain at follow up visits.

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