

Evaluation of Growth Hormone Use in Patients Admitted to a Large Burn Center with Large Burns or Extensive Wounds

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Abstract

Large burns can lead to extensive catabolism resulting in impaired wound healing. A cornerstone of burn management focuses on adequate nutrition and anabolic therapies, primarily oxandrolone to optimize wound healing. Somatropin, human growth hormone (HGH), is of interest for burn patients due to its anabolic properties and promotion of cellular uptake of amino acids. HGH has been used as salvage therapy burn ICU patients with poorly and slowly healing wounds; however, its place of therapy is not well defined.

The purpose of this study was to retrospectively evaluate the appropriateness of HGH use, adverse effects and cost in patients with large burns or extensive wounds. In this IRB approved, single-center, retrospective chart review, adult and pediatric patients who received somatropin as part of their anabolic therapy regimen were included. Thirty eight patients met inclusion criteria, and had a median TBSA involvement of 50% (IQR 40-71) and a median length of stay of 84 days (IQR 42-160). Primary outcome was % patients who were appropriately prescribed somatropin (appropriateness defined as a composite of documentation of poor wound healing and prior receipt of oxandrolone and prior receipt of at least 80% of prescribed nutrition). Secondary outcomes included prescribing patterns, clinical benefits and adverse events of HGH. Forty one percent of patients met appropriateness criteria for HGH initiation, and that low percentage was primarily driven by lack of documentation of poor wound healing. Patients either received 20mg or 0.2mg/kg SQ daily of HGH. The median treatment duration was 24 days (IQR 13-35). Half of the patient population experienced overall improvement from HGH use, which was primarily driven by improved wound healing and closure. The most commonly observed adverse effect was hyperglycemia (57% of patients).

Based on these results, HGH may have a role in patients with non-healing wounds in whom all other anabolic therapies have been optimized and who have no contraindications to HGH. A prescribing guideline to this therapy would be beneficial to ensure appropriate place in therapy and timing of initiation as well as close monitoring of adverse events.

Learning Objectives

- Describe the role of somatropin in the management of non-healing wounds