Insulin NPH is safe and effective for steroid-induced hyperglycemia when starting at a dose of 0.5 units NPH/mg of prednisone.

Insulin NPH for Steroid-Induced Hyperglycemia: Predictors for Success
Andrew Stone, PharmD; Kathleen Dungan, MD, MPH; Joshua Gaborcik, PharmD, BCPS
The Ohio State University Wexner Medical Center

Background
Up to 86% of patients on corticosteroids experience at least one episode of hyperglycemia1 and 18.6% of those develop diabetes2 with a 36% increased risk of development of diabetes throughout lifetime3
NPH has a similar pharmacokinetic profile to glycoemic effects of intermediate acting steroids (prednisone, prednisolone, methylprednisolone)
- Onset at 4-8 hours and duration of 12-16 hours
- NPH has demonstrated reduction in insulin requirements compared to glargine and reduced BG values compared to basal/bolus alone4
No studies have evaluated impact of strategy or patient factors on methylprednisolone

Methods

Data show “real-world” practice for acute care patient population
Significant difference in day 1 dosing of NPH and day 3 hour 0 blood glucose between groups based on primary outcome
Multivariate analysis attempted, but unable to achieve sufficient goodness of fit due to sample size
- Factors included: HgbA1C, Caucasian race, steroid dose on day 3, corrective insulin daily dose on day 3, NPH dose on day 3
Plan to develop hospital wide protocol for corticosteroid-induced hyperglycemia management
- Encourage higher NPH dosing earlier

Financial Disclosures
A Stone and J Gaborcik have no financial disclosures.
K Dungan has disclosed that they are consultant/member of the advisory board on Eli Lilly, Jansen, and Novo Nordisk, have received an honorarium from Nova Biomedical, Elsevier, and UpToDate, and have received grant funding from Eli Lilly, Sanofi Aventis, Novo Nordisk, and Abbott.