MEMO

To: YHHHS Medical and Nursing staff
From: YNHHS FIC Endocrine Subcommittee
Subject: YNHHS GLYCEMIC MANAGEMENT FOR COVID+/PUI INPATIENTS
Date: April 22, 2020

Situation: In excess of 35% of our COVID+ inpatients have diabetes and/or stress or medication-induced hyperglycemia. It has been identified that there is potential to minimize staff exposure and conserve personal protective equipment (PPE) in the glycemic care of these patients.

Background: We are learning non-traditional ways to manage hyperglycemia in COVID+/PUI patients. These methods incorporate best practices learned from colleagues who are a few weeks ahead of us in COVID care, as well as those we have learned through our own experiences. We anticipate that these practices will evolve as we continue to learn more.

Assessment: During the COVID-19 pandemic, more liberal target blood glucose range (i.e., <200 mg/dL), medication regimens to manage blood glucose, and the availability of early expert advice are being recommended for COVID+/PUI patients with diabetes to support quality glycemic care while enhancing staff safety and preserving PPE.

Recommendations:

Virtual Glycemic Management Consult Service (YNHH only)
Yale endocrine fellows, supervised by a diabetes attending, will surveille Epic for COVID+ patients w/ significant hyperglycemia, focusing on those with BGs >250 x 2 in a 24 hr period. Those patients for whom glycemic control is not a pressing issue (i.e. end of life care), those already followed by our consult services, and those in whom appropriate therapeutic changes have already been made will be excluded. Advice for consideration will be placed into Epic as an “Evaluation note” and the primary team will be alerted to this by a MHB message. The service will begin on Weds 2-22-20.

General Glucose Monitoring Considerations:

Basal once daily and/or oral diabetes medications:
- CHECK POC glucose AM + HS ONLY (and PRN for symptoms of hypo- or hyperglycemia).
- Consider eliminating HS POC glucose testing if BGs are stable with no results less than 100 mg/dL x 3 days and no major change in clinical status, including starting or stopping steroids, nutritional support, etc.

Correction scale and/or prandial insulin:
- CHECK POC glucose BEFORE EACH INJECTION + HS (and PRN for symptoms of hypo- or hyperglycemia).
- If all BGs are < 180 mg/dL, consider stopping mealtime insulin and mealtime POC glucose testing.

If patient is eating and clinically stable:
- CONSIDER linagliptin 5 mg PO QD in combination or in lieu of insulin.
- Watch for hypoglycemia when adding any oral agent to insulin.

Anticipate hyperglycemia with initiation of steroids, tube feeds, TPN, and hypoglycemia with their discontinuation; be proactive. Call your hospital’s endocrine/diabetes team for help at any time.

Room Service meal delivery was suspended on COVID units at YNHH effective 4-16-20 to allow for clustering of care.

Additional NOVA Stat meters and “docks” are being deployed to allow meters to be left at the bedside. Wireless connectivity allows for results to flow directly to Epic.

In addition to clustering nursing care, when administering “correction” (sliding scale) insulin, use a “buddy system” whenever possible, with one RN performing POC glucose testing in the patient room and a 2nd RN drawing up and handing in syringe with appropriate insulin dose. This limits the need for one nurse to enter and exit the room twice to complete this process and is preferable to single RN “pre-drawing” syringe to maximum dose and discarding partial dose at time of administration as errors are more likely with this method.
Insulin Infusion Recommendations

The YNHHS COVID Insulin Infusion Protocol (IIP) has been developed and will be available later this week. This IIP was built on the footprint of the standard YNHHS IIP which are staff are well familiar with, with variations specific to the COVID/PUI population. These variations from the standard YNHHS IIP include:

- Q 2 hour blood sugars (allowing for decreased staff exposure and PPE use)
  - Nurses will need to divide BG change (mg/dL) by elapsed hours to calculate hourly rate of BG change (mg/dl/hour)
- Target BG range of 150-199 mg/dL (safer given less frequent testing)
- Should be employed when severe persistent hyperglycemia is not responding to aggressive titration of SQ insulin dosing.
  - ≥200 mg/dL for ICU
  - >300-350 mg/dL in non-critical care areas (YNHH only)

Insulin Infusion Best Practice Advisories (BPAs)

BPAs were developed by Endocrinology and fire for COVID+ and PUI patients when the provider places specific orders.

BPA #1 Fires to provider when ICU insulin infusion is ordered, with suggestions for using SQ insulin if possible. This will not fire if the COVID Insulin Infusion Protocol (order currently being built in Epic) is ordered.

BPA #2 Fires to provider when non-ICU insulin infusion is ordered, with suggestions for using SQ insulin if possible. This will not fire if the COVID Insulin Infusion Protocol (order currently being built in Epic) is ordered.
### Appendix: Endorsements

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<thead>
<tr>
<th>Individual Stakeholder Name</th>
<th>Month/Day/Year</th>
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<tbody>
<tr>
<td>Yi Hao Yu, MD</td>
<td>4/22/2020</td>
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<tr>
<td>Silvio Inzucchi, MD</td>
<td>4/22/2020</td>
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<td>Sachin Majumdar, MD</td>
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<td>Robert Gelfand, MD</td>
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