Preventing Hypoglycemia: Benefits of Administering Bedtime Snacks
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6 Acute Care

Introduction
Many of the patients that are admitted to the sixth floor have a diagnosis of Diabetes Mellitus (DM). As nurses, we frequently encounter patients that have uncontrolled DM and are often hypoglycemic with their morning glucose level. Our goal was to further educate fellow nurses in preventing morning hypoglycemia. Specifically, we wanted to see if it would be helpful to provide them with an evening snack when giving their evening insulin.

PICO
P: Adult Inpatient Diabetics Receiving Insulin
I: Giving Diabetic Appropriate Bedtime Snacks
C: Standard of Administering Bedtime Snacks Versus Current Hospital Practice
O: Prevention of Morning Hypoglycemia

Methods
Databases Used:
•CINAHL, PubMed, EBSCO Host
Search Terms Used:
•Hypoglycemia
•Inpatient Diabetic
•Bedtime Snacks

Results
From the Literature Search, 7 Articles were found, only 2 Articles were relevant the PICO question.
•Literature Review - 1
•Random Control Trial - 1
Interviews with Diabetic Nurse Educators were also used.

Survey
• Sent to all RNs on 6 Acute Care
• 21 Responses, 31% of RNs
• Question 1 – Are Bedtime Snacks Doctor Orders?
  • 86% answered NO
• Question 2 – Do you Have Patient Request Bedtime Snacks?
  • 91% answered YES
• Question 3 – Do you Believe Bedtime Snacks are Beneficial in Preventing Morning Hypoglycemia?
  • 100% answered YES
• Question 4 – How Many Shifts a Month do you Treat a Patient for Morning Hypoglycemia?
  • 80% answered 1-4 Shifts
• Question 5 – Do you Believe the Floor is Adequately Stocked with Diabetic Appropriate Snacks?
  • 81% answered NO

Survey Comments
• Night Shift and Weekends do not have access to as many snacks and diabetic patient’s are dissatisfied with snack options
• RN’s should also make more of an effort to talk with the Medical Teams regarding the adjustment of insulin doses when a pattern of morning hypoglycemia arises

Diabetic Care Journal
Randomized Placebo Control Trial:
• 4 Different Snacks Administered to Diabetics
  • Orange Juice (Placebo)
  • White Bread and Cheese
  • 2 Starch, 1 Protein
  • Cornstarch Dissolved in Drink
• Findings – Hypoglycemic Incidents Occur with No Snack and Sugar Less than 7mmol/L
• Conversion from mmol/L to mg/dL
  • 10mmol/L = 180mg/dL
  • 7mmol/L = 126mg/dL
  • 5mmol/L = 90mg/dL
• Conclusion – Sugars greater than 10mmol/L, patient’s get no snack; sugars 7-10mmol/L, patient’s get any snack; sugars less than 7mmol/L, patient’s get standard or protein snack

Interview
Interview with Jennifer Young, Diabetic Nurse Educator Found:
• Monitor Patients’ Morning Glucose Levels for a History of Hypoglycemia and Discuss the Option of Adjusting Insulin Dosing with Doctors if there Seems to be Hypoglycemia on a Continuous Basis
• Previous Bedtime Snacks were Done Away with due to Cost – not being administered to patients
• Patient’s Receiving 70/30 (N/R) or 50/50 (N/R) Mixed Insulin’s Qualify for Bedtime Snacks Due To These Insulin’s Actions
• Appropriate Bedtime “Snacks” consist of 15gms of Carbohydrates. Additional Snacks are RN Orders as a Communication to Dietary.
  • 3 Graham Crackers, 2/3 Cup Applesauce, 1/2 Cup Non Fat Ice Cream, 8oz. Milk, 1/2 Cup Sugar Free Pudding

Southern Medical Journal
Literature Review:
• Healthy Individuals experience Neurogenic Symptoms of Hypoglycemia at 68 mg/dl while Diabetics experience these Symptoms at a much lower level.
• Incorrect Insulin Doses and Mixtures of Long and Immediate Acting Insulin’s Account for the Majority of Nocturnal Hypoglycemia.
• Nocturnal Hypoglycemia often goes Undetected because the Diabetic Patient does not awake from the Symptoms which accounts from Inconsistencies in data.

Conclusions
Due to the lack of research articles pertinent to the PICO question, we were unable to draw a clear conclusion and initiate a policy/protocol for the floor. We were able to educate RNs and PCAs on the snacks already available on 6AC were appropriate for our Diabetic population. Furthermore, RNs should be more proactive in addressing the adjustment insulin levels with MDs to prevent morning Hypoglycemia if a pattern is documented. Further research will need to be performed on this topic.

References
(J. Young, personal communication, July 13, 2012)