# Urejanje glikemije pri bolniku, ki se ne hrani per os

Doc.dr.Vilma Urbančič, dr.med.
UKC Ljubljana – KO EDBP, Diabetološki oddelek

1.12.2010

10. Podiplomski tečaj iz hospitalne diabetologije
Ljubljana, 24.11. -2.12.2010

# Priporočila

Diabetes Management in the Hospital
Thomas W. Donner, MD, Kristin M. Flammer, MD

Donner WT, 2008

REVIEW

Management of Diabetes and Hyperglycemia in the Hospital: A Practical Guide to Subcutaneous Insulin Use in the Non-Critically Ill, Adult Patient

Society of Hospital Medicine Glycemic Control Task Force Recommendations

Wesorick et al, Journal of Hospital Medicine 2008

**TABLE 2**
**Society of Hospital Medicine Glycemic Control Task Force Recommendations: Preferred Insulin Regimens for Different Nutritional Situations**

| Nutritional Situation | Necessary Insulin Components | Preferred Regimen* |
|---|---|---|
| NPO (or clear liquids) | Basal insulin: 50% of TDD. Nutritional insulin: None. | Basal insulin: glargine given once daily or detemir given twice daily. Nutritional insulin: None. Correctional insulin: Regular insulin q 6 hours or RAA insulin q 4 hours. Other comments: Dextrose infusion (eg, D5 containing solution at 75-150 cc/hour) recommended when nutrition is held. An IV insulin infusion is preferred for management of prolonged fasts or fasting type 1 diabetes patients. |
| Eating meals | Basal insulin: 50% of TDD. Nutritional insulin: 50% of TDD, divided equally before each meal. | Basal insulin: glargine given once daily or detemir given twice daily. Nutritional insulin: RAA insulin with meals. Correctional insulin: RAA insulin q AC and HS (reduced dose at HS). |
| Bolus tube feeds | Basal insulin: 40% of TDD. Nutritional insulin: 60% of the TDD, divided equally before each bolus feed. | Basal insulin: glargine given once daily or detemir given twice daily. Nutritional insulin: RAA insulin with each bolus. Correctional insulin: RAA insulin with each bolus. |
| Continuous tube feeds | Basal insulin: 40% (conservative) of TDD. Nutritional insulin: 60% of the TDD in divided doses. | Basal insulin: glargine given once daily or detemir given twice daily. Nutritional insulin: RAA insulin q 4 hours or regular insulin q 6 hours. Correctional insulin: Should match nutritional insulin choice. |
| Parenteral nutrition | Insulin is usually given parenterally, with the nutrition | Initially, a separate insulin drip allows for accurate dose-finding. Then, 80% of amount determined as TDD using drip is added to subsequent TPN bags as regular insulin. Use correctional subcutaneous insulin doses cautiously, in addition |

**Abbreviations:** HS, at bedtime; IV, intravenous; NPO, nothing by mouth; q 4 hours, every 4 hours; q 6 hours, every 6 hours; q AC, before every meal; RAA, rapid-acting analog; TDD, total daily dose; TPN, total parenteral nutrition.

* These are the preferred regimens for most patients in these situations by consensus of the SHM Glycemic Control Task Force. Alternate regimens may appropriately be preferred by institutions or physicians to meet the needs of their own patient population. RAA insulins include lispro, aspart, and glulisine.

Journal of Hospital Medicine 2008; Vol 3 / Issue 5 / Supplement 5

# Nič ali malo per os (bistre tekočine)

- Doma zdravljen z insulinom, dobro urejen
  - Nadaljevati z glarginom ali detemirjem, 80-100% odmerka od doma
  - Nadaljevati z NPH, 50 – 80% odmerka od doma, ali zamenjati za glargin / detemir
- Doma ni bil na insulinu
  - Uvesti bazalni insulin 0.2E / kg TT / dan
- Korekcijski bolusi kratkega na 4-6 h

- Bazalni insulin: 50% CDO
- Prandialni insulin: 0
- Shema:
  - Glargin 1x ali detemir 2x dnevno
  - Prandialni: 0
  - Korekcija: *kratki humani na 6 h* ali ultrakratki analog na 4 h.
  - Infuzija glukoze, če bolnik ne je
  - Če dlje časa NPO: kontinuirana iv infuzija

Donner WT, 2008

Wesorick et al, J Hosp Med 2008

## Hrana po sondi, bolusi

- Bazalni insulin: 40% CDO
- Prandialni insulin: 60% CDO, enakomerno razdeljeno med vse boluse
- Shema:
  - Glargin 1x ali detemir 2x dnevno
  - Prandialni: ultrakratki analog ob vsakem bolusu
  - Korekcija: ultrakratki analog ob vsakem bolusu

Wesorick et al, Journal of Hospital Medicine 2008

## Hrana po sondi, kontinuirano

- Bazalni insulin: 40% CDO
- Prandialni insulin: 60% CDO, enakomerno razdeljeno med vse boluse
- Shema:
  - Glargin 1x ali detemir 2x dnevno
  - Prandialni: ultrakratki analog vsake 4 ure ali *kratki humani vsakih 6 ur*
  - Korekcija: skupaj s prandialnim insulinom

Wesorick et al, Journal of Hospital Medicine 2008

## Parenteralna prehrana

- Parenteralna aplikacija insulina, skupaj s parenteralno prehrano (??? ☹☹☹)
- Na začetku insulin posebej v kontinuirani infuziji – za določitev prave doze
- Kasneje 80% odmerka (kratki humani), ki je bil ugotovljen s kontinuirano infuzijo, dodati v KPP vrečo ☹☹☹
- Korekcijski sc bolusi – previdno ☹☹☹

Wesorick et al, Journal of Hospital Medicine 2008

## Kontrole krvnega sladkorja

Ob postelji in ne v laboratoriju!

Priporočila za pogostnost meritev – študij ni, priporočila temeljijo na konsenzualnem mnenju strokovnjakov

Bolnik se hrani per os, insulin s.c.:

- Pred glavnimi obroki – redne kontrole
- Pred spanjem - pogosto
- Ponoči - občasno
- 1.5 h po obrokih – po potrebi

Parenteralna prehrana, insulin v kontinuirani infuziji:

- Stabilna glikemija: na 3 – 4 ure
- Neurejena glikemija: **vsako uro!!!**