EEM 2019
The Slovis Approach to Hypoglycemia

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Mastering Emergency Medicine

- Secure the ABC's
- Consider or give NGT
  - Five Causes
    - Five Steps
      - Five Reasons for almost everything

Status Seizures

- Vital Signs
- Toxic–Metabolic
- Structural
- Infectious
- Epilepsy

AMS

- Vital Signs
- Toxic–Metabolic
- Structural
- Infectious
- Psychiatric

Always check a glucose in anyone who is "not right"

- AMS
- Seizure
- Stroke
- Post Ictal
- Weak
- Focal Findings

Hypoglycemia
always needs to be
"ReExplaind"

Hypoglycemia ReExPLAIND

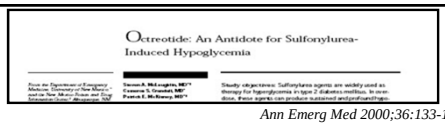
Re	**Renal**
Ex	Exogenous Insulin/antihyperglycemics
P	Pituitary Insufficiency
L	Liver
A	Alcohol, Addison's, Aspirin
I	Infection, Insulinoma
N	Neoplasm
D	Drugs

Hypoglycemia (Drugs)

- Beta Blockers
- Alcohol
- Aspirin
- Pentamidine
- Valproic Acid

The signs and symptoms of hypoglycemia are variable and are dependent on both:

– Low Glucose Levels
– Rate of Fall of Glucose


Octreotide: An Antidote for Sulfonylurea-Induced Hypoglycemia

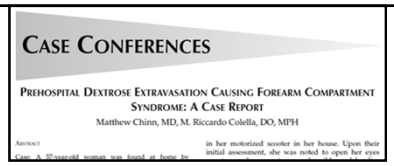
Ann Emerg Med 2000;36:133-138

- Octreotide cures sulfonourea induced hypoglycemia
- Eliminates refractory hypoglycemia
- Decreased hypoglycemic episodes by a factor of 27
- D_{50} rarely required post octreotide
- Stabilization was immediate

One amp of D_{50} should raise serum glucose by about 200 mg/dl for up to 30 minutes.

If it doesn't look for complicating factors like sepsis, insulin OD, oral agent OD, or ASA OD

Should we really keep using D_{50} in Hypoglycemic patients?


CASE CONFERENCES

PREHOSPITAL DEXTROSE EXTRAVASATION CAUSING FOREARM COMPARTMENT SYNDROME: A CASE REPORT

Matthew Chinn, MD, M. Riccardo Colella, DO, MPH

Prehosp Emerg Care 2017;21:79-82

- Compartment Syndrome after D_{50}%
- 57 yo woman required fasciotomy
- Important facts on D_{50} provided
- Suggests D_{10} as an alternative

PREHOSPITAL DEXTROSE EXTRAVASATION CAUSING FOREARM COMPARTMENT SYNDROME: A CASE REPORT

Matthew Chinn, MD, M. Riccardo Colella, DO, MPH

D_{50}% vs D_{10}%

Prehosp Emerg Care 2017;21:79-82

- D_{50} osmolarity = 2,525 mOsm
- pH = 3.2 – 6.5
- Hypertonic and acidotic = ↑ phlebitis
- D_{10} = 505 mOsm

D10 IN THE TREATMENT OF PREHOSPITAL HYPOGLYCEMIA: A 24 MONTH OBSERVATIONAL COHORT STUDY

H. Gene Hern, MD, Matthew Kiefer, MD, Derex Louie, PharmD, Joseph Barger, MD, Harrison J. Alter, MD, MS

ABSTRACT

Introduction: Prehospital first responders historically have used an IV bolus of 50 mL of 50% dextrose solution (D50) for the treatment of hypoglycemia in the field. A local Emergency Medical Services (EMS) system recently approved a hypoglycemia treatment protocol of 25 gm dextrose solu-

dextrose, and potential neurotoxic effects of hyperglycemia. Additionally, our data suggest that there may be little or no short-term decrease in blood glucose results after D10 administration. **Key words:** Hypoglycemia; EMS; D10; D50

PREHOSPITAL EMERGENCY CARE 2017;21:63–67

Prehosp Emerg Care 2017;21:63-7

Can D_{10}W be substituted for D_{50}W?

- 24 month trial of 871 pts, 100 ml D_{10}W
- Contra Costa EMS and Highland Hospital
- Average initial glucose was 37; repeat 91 mg %
- 23% required a second bolus
- 0.8% (< 1:100) required a third

D_{10} vs D_{50} Take Homes

- Both raise glucose effectively
- D_{50} to 250 in 5 min; D_{10} to 100 in 10 min
- May need to repeat D_{10} in 1 in 4 patients
- D_{10} may be safer
- No definitive head to head large trial yet

Always Consider Wernicke's

- Chronic Alcoholics
- Chronic Malnutrition
- Chronic Malabsorption
- Anorexia Nervosa
- Hyperemesis Gravidarum

Does pushing IV glucose, or starting a glucose infusion, cause acute Wernicke's Encephalopathy?

Irish J Med Sci 1981;150:301-303

ACUTE WERNICKES ENCEPHALOPATHY PRECIPITATED BY GLUCOSE LOADING

A. J. S. Watson, J. F. Walker, G. H. Tomkin, M. M. R. Finn and J. A. B. Keogh*

Departments of Medicine, Meath Hospital, Adelaide Hospital and Trinity College, Dublin.

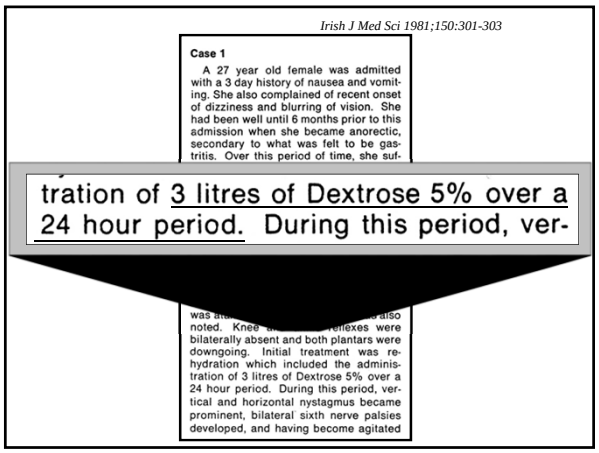
Summary

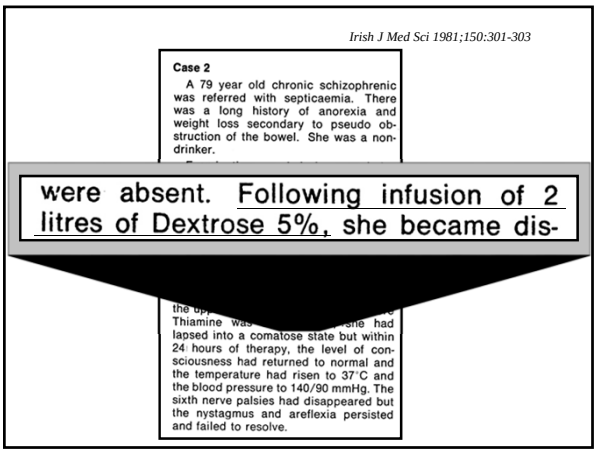
FOUR cases of acute Wernickes Encephalopathy in non-alcoholic, malnourished patients are described. In each case the administration of a glucose load precipitated a neurological crisis which was rapidly reversed by the administration of intravenous Thiamine. It is suggested that prophylactic Thiamine treatment therapy should be considered in the management of all mal-

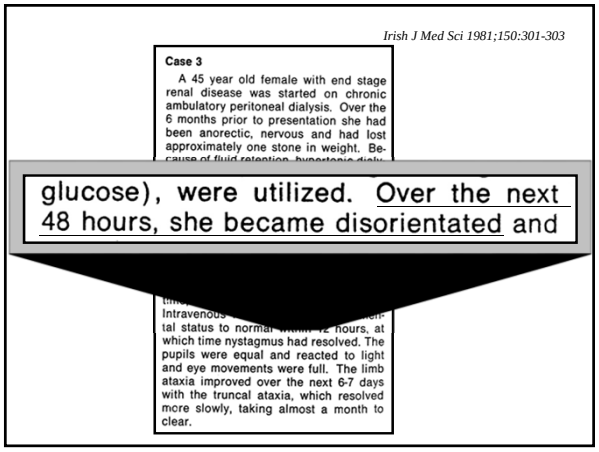
We report 4 cases of Wernickes encephalopathy occuring in malnourished patients, one of whom had a recent history of excessive alcohol intake, in which the administration of a glucose load precipitated a neurological crisis.

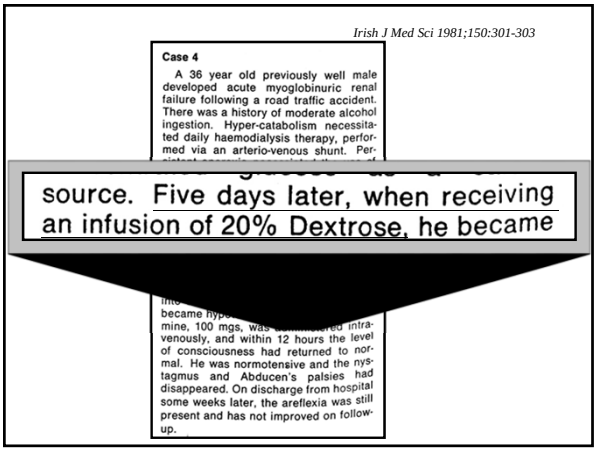
Case 1

A 27 year old female was admitted with a 3 day history of nausea and vomit-









AMS = Always Check Glucose

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