

Diabetes 101 in the Elderly

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Presentation Objectives

- State the difference between Type 1 and Type 2 diabetes
- List the S/S, treatment, prevention of Hyperglycemia & Hypoglycemia
- List the various medications used for diabetes
- Initiate safe care for the elderly with Diabetes

What is Diabetes?

- Diabetes is a progressive disease which results in High blood glucose
- Type 1 the beta cells that make insulin have been destroyed
- Type 2 the beta cells are making insulin, but it is ineffective due to insulin resistance

Causes of Hyperglycemia

- Liver: increased amount of sugar produced
- Pancreas: reduced amount of insulin released
- Muscle: insulin does not work as it should and as a result sugar can't be stored or used properly (insulin resistance)

Hyperglycemia

- Occurs with Blood Glucose above 10mmol/L
- Cause: Sedentary lifestyle, not enough insulin, eating too many CHO, stress, illness, & infection

Signs & Symptoms High Blood Sugar

- increased urination,
- intense thirst,
- dry mouth,
- excessive hunger,
- weight loss
- Blurred vision,
- fatigue,
- sleepiness,
- irritability,
- non healing wounds,
- infections

Treatment for Hyperglycemia

- Frequent BG monitoring
- Drink plenty of water
- Identify the cause and correct
- Call doctor or send to ER if BG above 20 mmol/L or can not retain fluids orally due to nausea & vomiting

Hyperglycemia in Type 2

- Severe dehydration
- Severe fatigue, possible seizure, coma stroke (BG over 33 mmol/L)
- Life threatening

Hypoglycemia (Low Blood Sugar)

- BG below 4 mmol/L
- Cause:
 - too much insulin
 - Delayed meals or not eating
 - Exercise
 - Vomiting &/or diarrhea
 - Alcohol
 - Gastroparesis

Hypoglycemia Signs & Symptoms

- tremors,
- shaking,
- palpitations,
- sweating or perspiration,
- anxiety,
- hunger,
- paleness,
- headache
- blurred vision
- numbness or tingling around mouth,
- fatigue or weakness,
- mood swings, aggressiveness,
- dizziness,
- unsteady gait,
- slurred speech,
- confusion, coma

Treatment for Hypoglycemia

- Test BG level
- Eat food containing at least 15 Gms. of CHO (juice, milk, glucose tablets or gel)
- Test in 15 min
- If still low CHO + protein such as cheese & crackers

Prevention of Hypoglycemia

- Meals on time
- Tends not to eat all their meals give insulin after meal.
- If BG is below 4 feed first then give insulin
- Hypoglycemia is one of the causes of strokes in the elderly.

Treatment for Diabetes

- Diet (exchange system, counting CHO)
- Exercise
- Oral agents
- Insulin

Oral Agents

- **Biguanides:** [works at the liver and muscle]
- Glucophage: (Metformin) 500mg- 1gm
BID
- Glumetza *ER*
- helps body respond to it's own insulin by decreasing the amount of sugar the liver produces & reducing the sugar the intestines absorb

Oral Agents

- **Sulfonylureas:** stimulate the pancreas to make insulin
- Amaryl: 1-8 mg
- Diabeta (Glyburide): 2.5-20 mg (BID)
- Diamicron MR (Gliclazide) 30-120 mg OD

Oral Agents

- **TZDs: Thiazolidinediones** (works in liver to reduce glucose production plus muscle, and adipose tissue. Can cause heart failure (fluid build up))
- Actos, (Pioglitazones) 15-45mg OD
- Avandia (Rosiglitazones) 4-8 mg BID

Oral Agents

- DPP-4 Inhibitors:
- Januvia: 100 mg OD
- reduces amount of sugar produced by the liver
- Increases release of insulin from the pancreas

Oral Agents

- **Meglitinides:** causes pancreas to release insulin more quickly after meals
- Gluconorm 0.5-4mg with meals
- Starlix 60-180 mg with meals

- **Acarbose:** slows gut absorption of starch and sucrose

Insulin

- Rapid - Novo Rapid, Humalog, Apidra
- Toronto (Regular)
- NPH Lente (Intermediate)
- Premix (Regular + NPH)
- Basal Insulin – (Lantus) _ Levemir)

Insulin use in the Elderly

- New Rapid Insulins can be taken after meals. Start to work in 10 min, duration 4 hours.
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- Basal Insulin very safe with the elderly, due to no peaking action – less possibility for hypoglycemic episodes. Duration 24 hours.
- New Premix insulin is safer due to basal action

Goal of Controlling Diabetes

- Preventing debilitating complications such as:
 - Blindness
 - Amputations
 - Kidney Failure
 - Heart Attacks & Strokes
 - Severe nerve damage

Safe Care for the Elderly

- Their ability to taste & smell may be decreased, so they lose interest in food
- Depression can contribute to appetite loss
- Difficulty eating due to poor teeth and dry mouth
- Poor nutrition or less food intake can contribute to hypoglycemia

Safe Care for the Elderly

- Decreased kidney function can cause some drugs to last longer or build up to excessive levels in their body
- Metformin is a good choice does not cause hypoglycemia
- Gluconorm is also a good choice (taken with food short action) less chance of hypoglycemia

In Conclusion

- State the difference between Type 1 and Type 2 diabetes
- List the S/S, treatment, prevention of Hyperglycemia & Hypoglycemia
- List the various medications used for diabetes
- List safe care for the elderly with Diabetes

Quiz

2 people on a deserted island one has Type

1 and one has Type 2

Who will survive and why?

Quiz

- Hyperglycemia is caused by:
 - A. Too much medication
 - B. Too much sugar in the blood
 - C. Too little sugar in the blood
 - D. Pizza
 - E. All the above

Quiz

- Causes of Hypoglycemia:
 - A. Alcohol
 - B. Too much medication
 - C. Not enough food
 - D. Gastroparesis
 - E. All the above

Quiz

- Which medication could be unsafe for the Elderly:
 - A. Gluconorm
 - B. Metformin
 - C. Gliclazide MR
 - D. Basal Insulin

Quiz

- What does decreased appetite, depression, and difficulty eating contribute to?

Quiz

- True or False
- Some drugs last longer or build up to excessive levels in their body because of decreased kidney function in the elderly

Quiz

- True or False
- The leading cause of strokes/death in the elderly with diabetes is hypoglycemia.