



Department of Anesthesia Techniques

Title of the lecture:- considerations

with diabetic patient
Dr.Amassi Yakdhan

Dr.amassi.yakdhan@mustaqbal-college.edu.iq



Anesthetic considerations with diabetic patient

Practical lecture

What is diabetic ?

- Insulin insufficient production , or body tissue resistance to insulin .
- Level of serum glucose will increase .
- Its types (type 1 , type 2 , gestational diabetes) .

What is the effect of DM on anesthesia ?

- End organ damage .
- Body systems effect :
 - Nervous system : autonomic neuropathy that lead to profound hypotension during induction & intra operative , full stomach (gastroparesis) ,so RSI .
 - C.V.S : Ischemic heart disease , sudden MI , coronary artery disease , peripheral vascular disease .
 - Immune system effect □ increase rate of infection
 - Joints & collagen disorders □ difficult airway management or difficult positioning for neuraxial anesthesia .

Why hyperglycemia is contraindicated during surgery ?

- DKA (diabetic ketoacidosis)
- Sudden death



Department of Anesthesia Techniques

Title of the lecture:- considerations

with diabetic patient
Dr.Amassi Yakdhan

Dr.amassi.yakdhan@mustaqbal-college.edu.iq



- MI myocardial infarction or stroke
- Risk of infection

Which better with DM patient neuraxial or GA ?

GA increase level of catecholamine , cortisol & glucagon & volatile agent cause inhibit insulin secretion & increase hepatic glucose production , so neuraxial is better .

What are the medical management of DM ?

- Oral hypoglycemic drugs .
- Insulin
- Diet control
- Mixed 3 above .

What are our perioperative management to diabetic patient under going surgery ?

- Type of DM , type of treatment & its control .
- If there are any systemic or end organ damage .
- Communication with his physician .
- Last attack of hyper or hypo glycaemia .
- Glycemic control , electrolyte balance & acid



Department of Anesthesia Techniques

Title of the lecture:- considerations

with diabetic patient
Dr.Amassi Yakdhan

Dr.amassi.yakdhan@mustaqbal-college.edu.iq



base status .

- HbA1c < 6.5 & glyceimic profile
- Hydration state .
- Communication with the surgeon about type , site , time of surgery .

When we measure blood sugar pre operative ?

- You should have the Hb1Ac profile of patient .
- Each 4 hrs if short acting insulin
- Each 8 hrs if long acting insulin
- Day of surgery for all types of hypoglycemic

When we should measure blood sugar intra operative ?

- Before induction
- Each hour during surgery
- Before recovery period
- Before discharging of the patient

Important tricks of DM :

- Avoid hypoglycemia < 4mmol / l because of irreversible brain damage .
- Avoid hyperglycemia > 14mmol / l because of DKA
- Keep glucose level 6_ 10mmol / l intra operative
- ‘Stop oral hypoglycemic & long acting insulin & change



Department of Anesthesia Techniques

Title of the lecture:- considerations

with diabetic patient
Dr.Amassi Yakdhan

Dr.amassi.yakdhan@mustaqbal-college.edu.iq



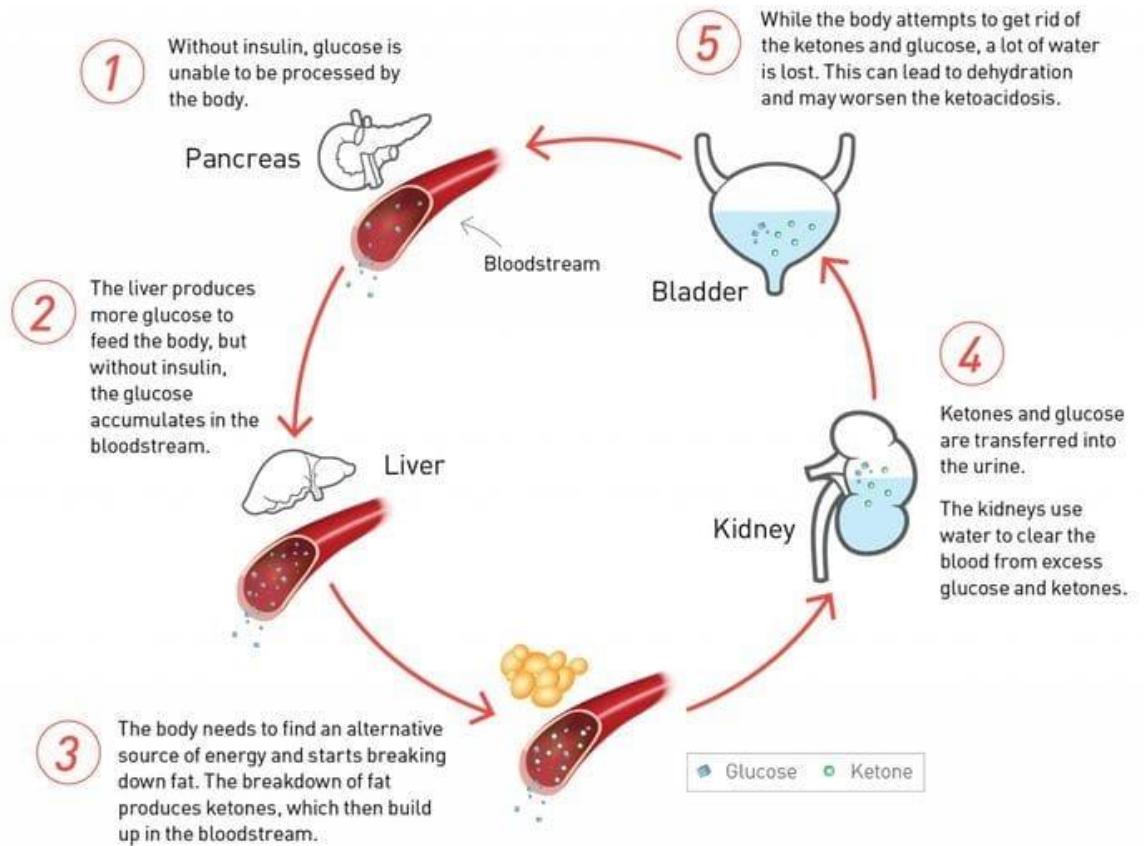
to short acting insulin

What we do on day before surgery ?

- Stop oral hypoglycemic at 12 a.m before morning of the surgery .
- At 6 a.m of day of surgery give Dextrose fluid 5% D + 1/2 normal dose of the usual insulin
- Continue on 5% D + 5 unit insulin or according to reading intra operative .
- May need to give potassium intra operative
- HDU admitting & sliding scale start .

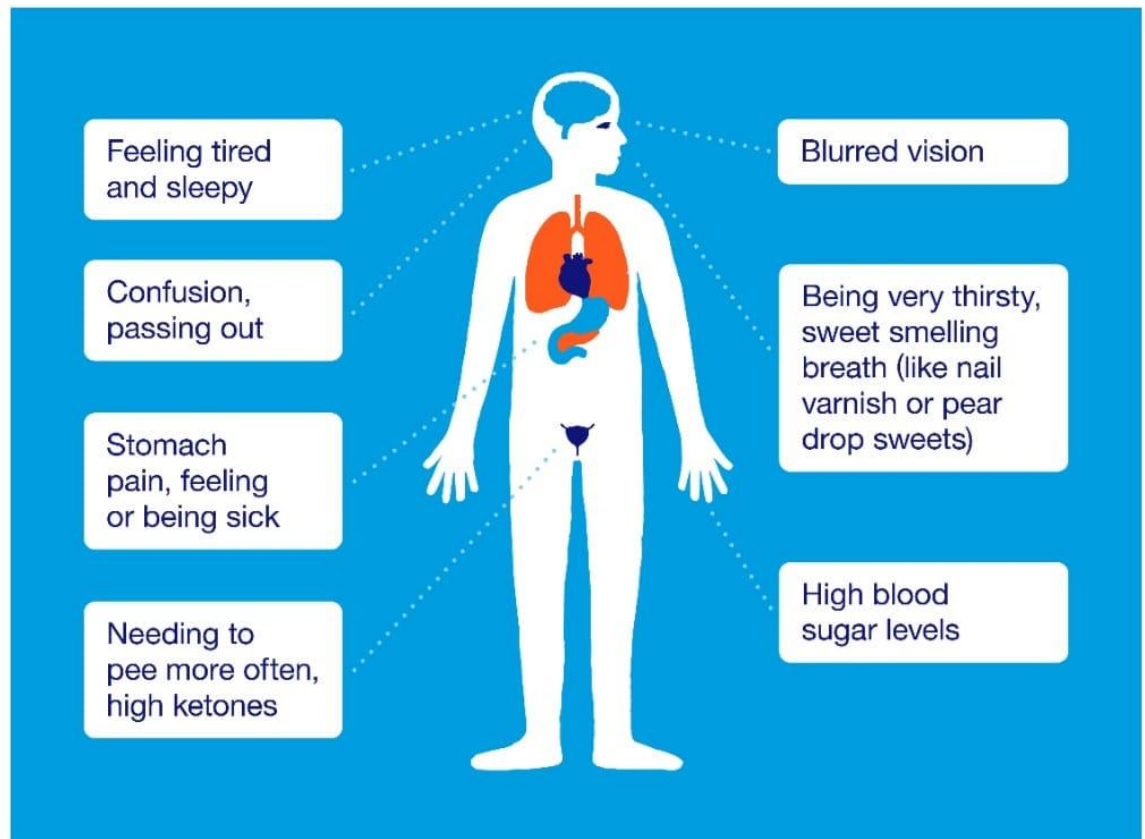
Why we may give patient potassium k pre or intraoperatively for DM patient ?

- People with low k level release low insulin so lead to hyperglycaemia (high glucose level) .



What is DKA ?

- **Diabetic ketoacidosis**
- **Its mostly occur in those of type 1 DM**
- **Its sever lack of insulin in the body**
- **Body cant use sugar as energy**
- **Body use fat instead**
- **This lead to production of ketone bodies**
- **These ketones make blood to be acidic .**



What are chemical criteria of DKA ?

- Serum ketone > 6mmol/l
- Bicarbonate < 5mmol / l
- PH < 7.1
- K potassium <3.5 mmol/l
- Anion gap > 16
- Spo2 <92%
- GCS < 12

What are your management for DKA ?

- Admitting to CCU or RCU
- Fluid replacement
- Insulin replacement



Department of Anesthesia Techniques

Title of the lecture:- considerations

with diabetic patient
Dr.Amassi Yakdhan

Dr.amassi.yakdhan@mustaqbal-college.edu.iq



- Electrolyte replacement
- Sliding scale & management protocol
- Discover the precipitating factor
- Its serious condition could lead to die

Nursing Mnemonics

Diabetic Ketoacidosis - Treatment

KING UFC

K+ (potassium)

Insulin

Nasogastric tube: if the patient is comatose

Glucose: once serum levels drop

Urea: monitoring

Fluids: crystalloids

Creatinine: monitor and catheterize

#NursingMnemonics





Department of Anesthesia Techniques

Title of the lecture:- considerations

with diabetic patient
Dr.Amassi Yakdhan

Dr.amassi.yakdhan@mustaqbal-college.edu.iq



Thank you