

Diabetes case study

Business



James is 18 years of age and has just presented (with his parents) to his G.P. with a 2 week history of extreme fatigue, polyuria, polydipsia, and weight loss. His random BGL is 41 mol/l and his blood ketones show 3. Mmol/l. His G.P. has diagnosed Type 1 diabetes with DKA and has sent him to the emergency department to see an endocrinologist at your public hospital, SST Health Skills.

The endocrinologist has decided on Inpatient stabilization.

James has been deemed stable enough with his DKA to avoid ICU admission, but requires acute nursing care. He is severely dehydrated, his potassium and sodium levels are low and he is experiencing muscle and abdominal cramps and some problems breathing. James is conscious, anxious and angry. His parents are with him and are dazed and concerned. James has been admitted to your general medical ward and the doctor asked you to make a referral for diabetes education and dietitian services but it is Saturday of a long weekend and there are none of these services in place until Tuesday.

Question 1 Define DKA Diabetic acidosis's (DKA) is caused by an extreme deficiency of insulin and presents as hyperglycemia, ketosis, acidosis and dehydration. DKA is more likely to occur with type 1 diabetes although in times of severe illness or stress type 2 diabetics can also develop this condition. Episodes of DKA usually occur in those with illness, infection, inadequate insulin dosage, before the person is aware that they have type 1 diabetes, or poor self-care. Impending or actual DKA is a life threatening condition which results in metabolic acidosis. Brown & Edwards,

2012) Question 2 Explain the difference between type 1 diabetes and type 2 diabetes and how each is diagnosed.

Type 1 diabetes (insulin deficient) symptoms typically present in childhood/early adulthood and is essentially an autoimmune disease. The pancreas which produces insulin, a hormone that regulates the amount of sugar in the body begins to attack itself destroying the insulin producing beta cells in the pancreas, leading to insulin deficiency. Type 1 diabetes can also be caused by a virus that damages the pancreas in some way.

This condition is not preventable and those with type 1 require regular ongoing insulin injections to balance blood glucose levels. (WebMD, LLC, 2012) Type 2 diabetes (insulin resistant) is when not enough insulin is produced by the increase leaving the body unable to control sugar levels in the blood. It is believed that obesity causes the body cells to become resistant to insulin therefore this type of diabetes is mainly escalated with a lack of physical activity, closely associated with poor diet.

This condition is preventable through early lifestyle changes.

The person may not have symptoms prior to diagnosis and the disease develops gradually meaning that as the disease gets worse the pancreas may make less insulin. (WebMD, LLC, 2012) Diagnosis of diabetes mellitus involves; patient history and physical examination. Blood tests including; Fasting Blood Glucose level exceeding 7.0 mmol/l, HbA1c level exceeding 6.5%.

Oral Glucose Tolerance Test using a 75g glucose load, postprandial blood glucose, HbA1c over a 2-3 month period > 8%, lipid profile, serum urea and serum creatinine,

electrolytes. Complete urinalysis. Brown & Edwards, 2012) Question 3 How will you approach this initial meeting with James and his family? What things do you need to consider? Are there any emotional considerations? James is feeling anxious and angry about the situation he is in. I believe he would be feeling this way due to the uncertainty of what is happening to his body and a lack of understanding of his condition. I would consider these things in my approach to both James and his family by explaining what nursing interventions we are doing and why it is necessary for these interventions to be carried out.

I would also try to promote informed decision making on the part of James and his family. As they are feeling very overwhelmed by what is happening it would be ideal to use simple terminology at this stage. Education about DAKAR and type 1 diabetes would need to be broken into small easy to understand stages as there is an abundance of information that James and his family need to know. I would encourage the expression of views, feelings and ideas from James and his family. Question 4 What initial medical management and subsequent nursing care do you think James will require, to treat his diabetic acidosis's? List and explain rationale for each treatment) Ensure patent airway and administer oxygen via nasal cannula or non-rebates mask.

Establish IV access and begin fluid stabilization with 0.9% normal saline and potassium. The fluid type and volume to be infused will need to be adjusted dependent on glucose, sodium and potassium levels. Management requires careful monitoring of IV fluids to correct dehydration, administration of insulin therapy per actor's order to correct hyperglycemia, and

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administration of electrolytes to correct electrolyte imbalance. Brown & Edwards, 2012) Continue infusion until blood pressure stabilizes and urine output is increased to 0.9% normal saline is an isotonic fluid that is compatible with the body normal pH levels.

The purpose of initiating isotonic infusion initially is to re-establish blood pressure and to increase urinary output as when urinary output is less than ml/h there is a very high chance of kidney failure. Potassium is administered to correct hypoglycemia, and sodium bicarbonate if severe acidosis pH