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Case Study: Pancreatitis

A 44 year old male patient has been admitted to the medical-surgical unit of the hospital for after seeking treatment for nausea, vomiting, and severe abdominal pain. The patient developed sudden and intense pain in the right upper quadrant the evening before and waited a few hours before seeking treatment. He has a history of substance abuse and has been in rehabilitation for both alcohol and stimulant abuse. He currently still uses both alcohol and methamphetamines, despite previous attempts of treatment at detoxification centers.

Upon admission, the patient is anxious and restless, complaining of severe pain that is unrelieved by pain medication. The nurse contacts the provider to ask for further orders for opioid medications to treat the pain. The provider also orders further diagnostic tests to confirm the cause of the patient's pain and symptoms as well as a **500mL bolus of Lactated Ringer's solution IV, followed by a regular rate of LR at 150 mL/hour. How long will this IV run at 150 mL/hour ___3 hours 20 minutes**

Calculation: 500/150 = 3.33

To compute minutes ---- 60 * 0.33 = 19.8 or 20 minutes

So, 3 hours and 20 minutes.

Please answer questions completely and use references

1. What types of diagnostic tests would most likely be ordered that could determine the cause of this type of abdominal pain? And why do you choose those diagnostic tests?

Computed Tomography Scan: The test images provide more detailed images but cannot be safely used in most patients with known kidney problems.

X-ray: An X-ray is used to look for structural complications of the pancreas. A CT scan produces more detailed images than an X-ray. It can show inflammation or damage in the pancreas. The X-ray and CT scan are painless procedures. They simply require that you remain motionless while the pictures are taken. Or it is used to look if kidney stones are present that could be causing pain.

Ultrasound: can be used to examine the abdomen and determine if there are issues present with the tissues and organs there. An ultrasound can often detect

problems with the pancreas, gallbladder and is frequently used to evaluate the kidneys.

2. What laboratory tests would the provider most likely order? And why do you think certain labs tests would be chosen?

Complete Blood Count (CBC): CBC, is a blood test that can help determine if an infection is present in the body. Certain types of blood cells increase when an infection is present, and the presence of infection can help determine the nature of the problem.

Comprehensive Metabolic Panel (CMP): CMP helps to determine patient's glucose level and balance of electrolytes and fluids, and kidney and liver function.

Liver Enzymes/Hepatic Function Test: Liver enzymes are tests that, when elevated, indicate a problem with the function of the liver. The liver can be damaged in many ways, including taking too much medication that is harmful to the liver, drinking too much alcohol, or by a natural disease process and these conditions are often painful**.** This patient has a history of alcohol abuse.

Amylase and Lipase: These blood tests look at enzyme levels produced by the pancreas. Elevated levels can indicate an infection or inflammation in the pancreas called pancreatitis, which can be extremely painful and can lead to hospitalization.

Urinalysis

This looks at the urine to determine if blood or infection is present in the urinary tract. A urinary tract infection can cause pain in the kidneys, ureters, bladder or urethra, or a combination of all four. This can lead to pain that is felt in the back, the abdomen or pelvis.

3. What effects would the patient's history of drug and alcohol abuse have on his abdominal pain? What do you believe is the diagnosis for this patient and why?

I think patient have the pancreas or liver problem because of his history of alcohol abuse. Restlessness related to abdominal pain as evidenced by history of alcohol. This diagnosis is chosen because patient has a history of drug and alcohol abuse.

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After answering these question see next page:

The provide orders an abdominal ultrasound and several laboratory tests, including a CBC, CMP, Glucose, Serum amylase, and serum lipase. **The nurse is also given an order for IV fentanyl to be given prn every 4 hours for pain control. (What is wrong with this order?) ____** The patient has a history of substance abuse with alcohol and methamphetamines. Fentanyl should not be used since it has a high dependency for abuse. Fentanyl is used as a last resort pain medicine, and there are other milder options that should be tried first for pancreatitis i.e. acetaminophen, ibuprofen. If those are not helping the patient can try a stronger pain medicine such as codeine or morphine. Risks are increased in patients with a personal history of substance abuse (including drug or alcohol abuse or addiction) thus, careful consideration should be taken with the type of pain medicine administered. ___After undergoing the ultrasound, the provider considers the patient may have acute pancreatitis caused by inflammation: there are several lesion noted on the pancreas that may have been caused by chronic alcohol use.

4. Based on the diagnosis of acute pancreatitis, what laboratory values would the nurse expect to see in this patient? What cetain lab values would be abnormal and why? What are the labs that pertain to pancreatitis? Why are these labs abnormal with pancreatitis? Were you right in questions 1, 2 & 3 about labs, diagnostics and diagnosis?

Levels of **lipase** or **amylase** (enzymes made by the pancreas) that are three times higher than the upper limit of normal. Pancreas produces both amylase and lipase. Inflammation of the pancreas (pancreatitis) commonly causes high levels of amylase and lipase in the bloodstream. Ultrasound shows several lesions on the pancreas (inflammation of pancreas) because of alcohol use considers the patient may have acute pancreatitis. Yes, I mentioned about this in above questions.

5. Why is pain control such an important component of management of acute pancreatitis?

Acute pancreatitis is very painful. It is important for the patient to have their pain managed because pain can severely agitate a patient, resulting in negative effects such as increased blood pressure. The agitation may also increase anxiety, nausea, and unpleasant side effects that can be difficult to cope with. Pain should be managed to keep these other side effects down. Significant pain associated with

pancreatitis can reduce a patient's quality of life. It is important to manage pancreatitis as soon as it is diagnosed because repeated episodes of inflammation can cause irreversible damage. Additionally, pain relief becomes much less effective over time.

6. What are some other orders would the nurse expect from the provider?

A major goal of pancreatitis is pain relief. Analgesics, such as meperidine, morphine, and hydromorphone, are commonly used to achieve pain control.

In addition, the provider should encourage bed rest, abstinence from food intake, fluid replacement, and nasogastric suctioning (for patients presenting with nausea and vomiting). The goals of therapy are to prevent systemic complications, pancreatic necrosis, and infection. Ensuring adequate nutritional support is also beneficial since pancreatitis attacks often create a catabolic state that potentiates the depletion of nutrients while also increasing the risk for complications.

Abstinence from alcohol is the key factor in relieving abdominal pain associated with pancreatitis. In addition, patients must adhere to a strict diet limiting intake of fat (50-75 g/day) and eat small, frequent meals (approx. 6 per day) to decrease the amount of postprandial enzymes secreted from the pancreas.

7. What teaching should be done for this patient?

- Don't drink alcohol again
- Eating a healthy diet that is low in fat, with no more than 30 grams of fat per day
- Eating foods that are high in protein and carbohydrates, but low in fat. Eat smaller meals and eat more often.
- Quitting smoking or using other tobacco products, if you use these substances.
- Losing weight, if overweight.
- Always talk to your provider before taking any medicines or herbs.
- Take your medicines exactly as directed. Take pills with every meal
- When you take these enzymes, you may also need to take another medicine to decrease the acid in your stomach
- Acute pancreatitis is a serious condition, and you should never drive if you are experiencing symptoms.
- Learn to take your own pulse.

References

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