From Pill to Patch: A Case of Hypertriglyceridemia-Induced Pancreatitis with Complications

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Introduction

The most common causes of acute pancreatitis are gallstones (40-70%) and alcohol (25-35%). Other less common causes may include hypertriglyceridemia (1-4%), medications and more. Familial hypertriglyceridemia is a rare cause of hypertriglyceridemia-induced pancreatitis that often presents in early adulthood. Triggers can include poorly controlled diabetes mellitus, pregnancy, alcohol, and medications such as hormone supplementation.

Case Description

30-year-old female with a history of type 2 diabetes (A1c 5.4) and hypertriglyceridemia-induced pancreatitis (last episode 15 months prior) presented to the hospital with severe acute abdominal pain radiating to the upper back, nausea, and vomiting. She had previously been diagnosed with hypertriglyceridemia after onset of yellow papules on her thighs, buttock, axilla, and back, which pathology report suggested eruptive xanthoma. There was strong suspicion for familial hypertriglyceridemia given her family and personal history of hypertriglyceridemia and acute pancreatitis, eruptive xanthomas, elevated triglyceride and VLDL levels. On her previous admission, she had similar presentation symptoms. At that time, her triglyceride level was 1444 mg/dL and peaked at 2127 mg/dL. She was treated with insulin and initiated on gemfibrozil. Two weeks prior to this admission, she had switched from an oral contraceptive regimen to hormonal birth control with patches. In hopes of reducing future pancreatitis episodes by lowering the impact of transdermal estrogen on triglyceride levels compared to oral estrogen. Of note, she was also using topical retinoids. At the time of presentation, CT abdomen revealed severe acute pancreatitis with developing necrosis of the pancreatic head. Her triglyceride level was over 3000 and her lipase was over 1400, confirming hypertriglyceridemia-induced acute pancreatitis. She was treated again with an insulin drip and gemfibrozil. Repeat CT of the pancreas revealed pancreatic tail necrosis and splenic vein thrombosis. No acute surgical intervention was warranted. She was treated briefly with antibiotics as well as started on anticoagulation. She was discharged in stable condition.

Discussion

While oral contraceptives containing estrogen are known to potentially contribute to hypertriglyceridemia, which can lead to acute pancreatitis in rare cases, usually in those with preexisting elevated triglyceride levels. To our knowledge, there have not been reported hypertriglyceridemia pancreatitis cases caused by hormonal patches or topical retinoids, likely due to the minimal transcutaneous absorption and lesser impact on triglyceride levels compared to oral formulations. However, in a patient with multiple other factors, perhaps even minimal systemic effects of transdermal estrogen or retinoids could contribute.

Sources[i]

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