Selvaraj V, DeMacedo S, Dapaah-Afriyie K. Isotretinoin-associated acute pancreatitis. *Brown Hospital Medicine*. 2022;1(1). doi:10.56305/001c.33633

Images in Hospital Medicine

Isotretinoin-associated acute pancreatitis

Vijairam Selvaraj, MD, MPH[1], Sherry DeMacedo, MSN, RN-BC, ACNP-AG[2], Kwame Dapaah-Afriyie, MD, MBA[1]

[1] Division of Hospital Medicine, The Miriam Hospital; Department of Medicine, Warren Alpert School of Medicine at Brown University,
[2] Division of Hospital Medicine, The Miriam Hospital

Journal of Brown Hospital Medicine
Vol. 1, Issue 1, 2022

Article Information

Keywords: pancreatitis, abdominal pain, accutane, isotretinoin, acne vulgaris, acne, hypertriglyceridemia, drug induced pancreatitis

https://doi.org/10.56305/001c.33633

Submitted: March 01, 2022 EST

Accepted: March 11, 2022 EST

Abstract

Acute pancreatitis is the leading cause of hospitalization in the US among gastrointestinal etiologies. Drug-induced pancreatitis is rare, although not uncommon. We describe a patient who developed acute pancreatitis after starting isotretinoin without associated dyslipidemia.

INTRODUCTION

Isotretinoin, a retinoid derivative, is widely used to treat acne vulgaris. Drug-induced pancreatitis is rare (0.3 to 1.4%)[1]; few cases secondary to isotretinoin-induced hypertriglyceridemia have been documented. We describe an interesting case of acute pancreatitis due to isotretinoin.

CASE REPORT

A healthy male in his late teens with history of acne vulgaris presented with acute abdominal pain. He could not do his usual workout at the gym and came to the hospital for further evaluation. He denied excessive alcohol intake, fever, or chills. He reported that he had been started on isotretinoin for his acne two weeks ago. His vital signs were remarkable for temperature 97.8F, heart rate 80 beats/min, and blood pressure 117/77 mm Hg on presentation. Physical examination revealed tenderness to palpation on the right side of his abdomen. Labs were notable for lipase 855 IU/L (10-60 IU/L), triglycerides 79 mg/dl (40-149 mg/dl) and white cell count of 11,500 (4,000-11,000). IgG levels were normal. CT imaging showed peripancreatic inflammatory changes and free fluid most consistent with acute edematous interstitial pancreatitis (Figure 1). He showed clinical improvement with intravenous fluids, pain medications, and after withholding the isotretinoin.

DISCUSSION

Acute pancreatitis is associated with significant potential morbidity and mortality. Acute pancreatitis carries a mortality of <1%; however, it can reach up to 30% for severe pancreatitis.[2] Most common etiologies include alcoholism, hypertriglyceridemia, and gallstone disease. Hypertriglyceridemia is not the sole cause of pancreatitis when levels are <1000 mg/dl. There is a need to explore for other etiologies in such cases. Pathogenesis is usually characterized by pancreatic inflammation, increased vascular permeability, and peripancreatic fat necrosis.

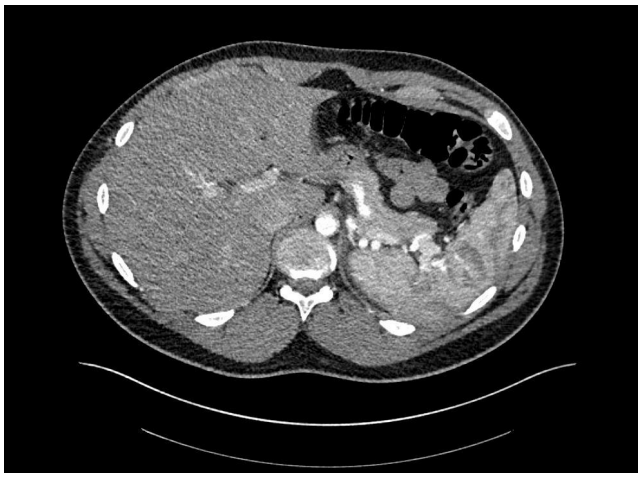

Figure 1. CT abdomen pelvis showing peripancreatic inflammatory changes, consistent with acute pancreatitis.

Drugs are responsible for a small percentage of cases. Several drugs have been associated with drug-induced pancreatitis, including sulfonamides, thiazides, valproic acid, gliptins, and glucagon like peptide-1 agonists, among many others. The mechanism of drug-induced pancreatitis is controversial. Some of the proposed mechanisms include pancreatic duct constriction, cytotoxic and metabolic effects, ischemia (e.g., cocaine), accumulation of toxic metabolites, intravascular thrombosis, and increased viscosity of pancreatic juice.[2] The mechanism in our case is unclear.

In a systematic review, 11 papers with 25 cases of isotretinoin-associated pancreatitis were identified; only four of these cases were likely due to hypertriglyceridemia.[3] No other etiologies were identified in our case. He scored four points on the Naranjo Adverse Drug Reaction Probability Scale, indicating possible adverse drug reaction probability (total score 1–4).[4] In conclusion, drug-induced pancreatitis is rare, although preventable. Most patients recover once the medication is stopped, and supportive treatment is likely needed in these patients. The prognosis of drug-induced pancreatitis is excellent, and mortality is low. Medication history should continually be reviewed in detail, and patients need to be informed of the risk of pancreatitis at the time of prescription.

Corresponding Author

Vijairam Selvaraj
Assistant Professor of Medicine, Clinician Educator
Warren Alpert School of Medicine at Brown University
Division of Hospital Medicine
The Miriam Hospital, 164 Summit Avenue, Providence, RI 02906
Tel: 401-793-2104
Fax: 401-793-4047
Email: Vijairam.selvaraj@lifespan.org

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