Concurrent Challenges: New-Onset Type 2 Diabetes and Invasive Pancreatic Adenocarcinoma: A Case Report

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Background: Pancreatic adenocarcinoma is a highly aggressive cancer with a five-year survival rate of about 10%, and is the third leading cause of cancer-related deaths in the United States. Approximately 53% of patients are diagnosed at stage IV, characterized by distant metastasis to common sites such as the liver and lungs. Liver metastases occur in 60-70% of metastatic cases, while lung metastases are seen in 10-15% of patients. The median survival for stage IV patients is typically around 3 to 6 months, with current treatments primarily focused on palliation. Advances in chemotherapy offer modest survival benefits, but early detection and effective management remain significant challenges.

Case Presentation: A 67-year-old male with a history of factor V Leiden on warfarin, DVT, PE, dyslipidemia, BPH, and newly diagnosed type 2 diabetes mellitus presented to the ED with abdominal pain and an elevated INR. Initially, the patient's INR was unmeasurably high and later rechecked at 8. He reported bilateral flank pain, jaundice onset the previous day, and recent constipation. Physical examination revealed generalized icterus and Grey Turner sign. Labs indicated obstructive jaundice. Imaging revealed hepatosplenomegaly, gallstones, and a suspected pancreatic tail mass with probable lung metastasis. Hematology/Oncology and GI were consulted, and Endoscopic US with FNA was recommended. Warfarin was held, and Vitamin K and FFP were administered to correct INR. Triple-phase abdominal CT and EUS/FNA confirmed a pancreatic tail mass and probable lung metastasis. ERCP with sphincterotomy was performed, but extrahepatic ducts were not dilated, making stent placement not possible. Subsequent PTC placement by IR improved liver function. Biopsies confirmed stage IV adenocarcinoma with metastasis. The patient had a port-a-cath placed and was discharged for oncology follow-up.

Discussion: The relationship between new-onset type 2 diabetes and pancreatic cancer is significant, with approximately 1% of individuals with new-onset diabetes being diagnosed with pancreatic cancer within three years. Nearly 25% of pancreatic cancer patients were first diagnosed with diabetes. This underscores the importance of considering new-onset diabetes as a potential early marker for pancreatic cancer, which is often diagnosed at an advanced stage.
The potential mechanisms linking diabetes and pancreatic cancer are not completely understood but may include insulin resistance and hyperinsulinemia, which may promote cancer cell proliferation. Chronic inflammation associated with diabetes can also contribute to carcinogenesis in the pancreas. Targeted screening for pancreatic cancer in new-onset diabetes patients could lead to earlier diagnosis and improved outcomes. The ENDPAC score is a tool designed to identify high-risk individuals by considering factors such as age, rapid weight loss, and worsening glucose control. The Early Detection Initiative (EDI) for Pancreatic Cancer, launched by the Pancreatic Cancer Action Network (PanCAN) in collaboration with the NCI, aims to validate the efficacy of targeted screening using the ENDPAC score and other risk stratification tools. While universal screening is impractical, these targeted approaches using clinical algorithms and biomarkers hold promise. Continued research and clinical trials are essential to refine these strategies and establish evidence-based guidelines for screening, ultimately aiming to improve outcomes for patients with pancreatic cancer.