Pancreatitis-induced prediabetes and hepatic lipidosis in a mixed breed cat

Siti Faridha Amalia Ihsanu Nadya¹, Arvia Chairunnisa¹, Sarasati Windria²,*
Prananda Eka Rifki³

¹ Veterinary Medicine Professional Program, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia
² Department of Biomedical Sciences, Division of Microbiology, Veterinary Medicine Study Program, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia
³ Zoom Veterinary Clinic, Jalan Golf Barat Raya No. 24 Sukamiskin Arcamanik, Bandung

ABSTRACT: Pancreatitis can lead to decreased insulin production and elevated blood glucose levels. Reduced insulin levels can cause excessive lipolysis, leading to hepatic lipidosis. This report aimed to illustrate how pancreatitis can result in prediabetes and hepatic lipidosis, providing insight into selecting appropriate and causal therapies. This case report discusses a 5-year-old male mixed-breed cat weighing 3.9 kg presented with anorexia and hypersalivation. Despite a routine physical examination, blood tests revealed decreased creatinine and Ca²⁺ levels and elevated blood glucose, SGPT, cholesterol, and amylase levels. These findings suggested a diagnosis of pancreatitis accompanied by prediabetes and hepatic lipidosis. The treatment administered included intravenous Ringer’s Lactate, subcutaneous Ornipural® injection, oral cephalaxin (Rilexine®) and Samylin®, and dietary management with specialized renal wet food.

Keywords: hepatic lipidosis, mixed breed cat, pancreatitis, prediabetes

INTRODUCTION
Pancreatitis is an inflammation of the pancreas with a prevalence of 67% among 115 cats (Forman et al. 2021). Blood chemistry is a diagnostic tool for pancreatitis that focuses on elevated amylase, lipase, cholesterol, and glucose activities. The clinical symptoms of pancreatitis in cats are non-specific, but anorexia, lethargy, and hypersalivation are often observed (Bazelle et al. 2014). There are no specific risk factors for pancreatitis; it can occur at any age, sex, or breed. The frequency of concurrent diseases in cats with acute pancreatitis is up to 92%, including hepatic lipidosis and diabetes. Pancreatitis reduces insulin levels, leading to glucose accumulation in the blood. The body uses fat and proteins as energy sources to compensate for this problem. However, continuous lipolysis can accumulate free fatty acids in the liver, causing hepatic lipidosis and increasing liver enzyme activity and blood glucose levels (Armstrong et al. 2012).

Currently, publishing such cases is difficult; therefore, sharing this information with veterinary medical professionals is crucial for better diagnosis and treatment strategies. This report aimed to illustrate how pancreatitis can result in prediabetes and hepatic lipidosis, providing insight into selecting appropriate and causal therapies.

CASES
Signalment: The patient is a 5-year-old male mixed breed cat weighing 3.9 kg. History: According to the owner, the cat has been refusing to eat and experiencing hypersalivation. The medical history of the cat is unknown. Physical Examination: The physical examination revealed dehydration and hypersalivation, while the temperature was normal at 39°C. Diagnostic Laboratory: Blood biochemistry. Diagnosis: Pancreatitis. Treatment: Administration of intravenous Ringer’s Lactate, subcutaneous Ornipural® injection, oral cephalaxin (Rilexine®) and Samylin®, and dietary management with specialized renal wet food.

RESULT AND DISCUSSION
Hypersalivation indicates nausea experienced by cats. Nausea can occur because of disorders in the digestive organs, particularly the liver and pancreas, leading to the need for blood chemistry analysis. This ancillary examination was limited to blood chemistry, which revealed decreased creatinine and Ca²⁺ levels and increased blood glucose, SGPT, cholesterol, and amylase levels (Table 1).
The treatments administered to the patient included intravenous Ringer’s lactate infusion to restore body fluids due to dehydration, subcutaneous Ornipural® injection to enhance liver and kidney function, and Samylin® containing a complex of antioxidants to protect the liver. Additionally, the patient was administered cephalexin (Rilexine®) antibiotics to prevent bacterial infections that could worsen the pancreatitis. The patient was provided specialized renal wet food (Royal Canin K/D®) to prevent further kidney deterioration caused by elevated blood glucose levels.

**CONCLUSION**

Pancreatitis in cats is often associated with prediabetes and hepatic lipidosis, leading to elevated blood glucose levels and fatty liver disease due to decreased insulin levels. Treatment included Omnipural®, Samylin®, Rilexine®, and specialized renal food with possible additional antiemetics and appetite stimulants. If the prediabetes progresses to diabetes, insulin therapy should be considered. The limited equipment availability and the owner’s ability to afford them prevented a definitive diagnosis; therefore, further tests such as fructosamine measurement, urinalysis, and abdominal ultrasound or X-ray are recommended.

**AUTHOR INFORMATION**

Corresponding Author  
*SW: sarasati.windria@unpad.ac.id*  
Department of Biomedical Sciences, Division of Microbiology, Veterinary Medicine Study Program, Faculty of Medicine, Universitas Padjadjaran, Jln Ir. Soekarno No. KM. 21, Hegaranah, Jatinangor, Sumedang Regency, West Java 45363, INDONESIA

**REFERENCES**