



# CASE REPORT

## Hydroxycut Induced Hepatitis and Pancreatitis:

### Weight Loss at a High Cost

Samuel Akidiva, M.D.<sup>1</sup>, Mahmoud Farhoud,  
M.D.<sup>2</sup>, Furqan Shoaib Siddiqi, M.D.<sup>3</sup>,  
Eli Brumfield, D.O.<sup>4</sup>

<sup>1</sup>University of Kansas

School of Medicine-Wichita, KS

<sup>2</sup>University of Central Florida

College of Medicine, Orlando, FL

<sup>3</sup>University of Florida

College of Medicine, Jacksonville, FL

<sup>4</sup>Life Care Center of Wichita, KS

### Introduction

Obesity continues to be a major health care problem in the US and adults spend over \$30 billion yearly in weight loss products and services.<sup>1</sup> The use of dietary supplements (DS), including herbal constituents such as Hydroxycut, has become a major health trend in affluent societies. Consumption of DS in the USA has doubled between 1999 and 2004 with 18.9% of adults admitting their use.<sup>1</sup> DS are expected to meet the standards outlined in the Dietary Supplement and Health Education Act of 1994 which allows distribution without prior approval of their efficacy and safety by the Food and Drug Administration (FDA).<sup>2</sup> This simplified licensing practice does not ensure efficacy and safety in the same strict way as with the approval of conventional medications and treatments. Therefore, risks of these drugs causing potentially life threatening side effects may go unreported.

### Case Report

A 28-year-old male with no known medical problems presented with a two-day history of abdominal pain, nausea, and vomiting. The pain was made worse with meals. He denied fever, chills, diarrhea, and constipation. He did not have any risk

factors for hepatitis infection and denied any recent travel, alcoholism, or drug overdose.

The initial exam essentially was normal, except for epigastric and right upper quadrant tenderness. Initial pertinent laboratory showed a white blood count of  $8.1 \times 10^3/L$ , an aspartate aminotransferase (AST) of 567 IU/L, alanine aminotransferase (ALT) of 281 IU/L, alkaline phosphatase of 586 IU/L, international normalized ratio of 1, total bilirubin of 5.4 mg/dL, conjugated bilirubin of 4.4 mg/dL, lipase of 103/ $\mu$ L, C-reactive protein of 48 mg, and acetaminophen was less than 2 mcg/ml. Hepatitis B surface antigen, hepatitis C antibody, and hepatitis A IgM were negative.

The patient improved with conservative management and was discharged. However, he presented three days later with similar symptoms. Laboratory work was consistent with hepatitis (ALT of 380 IU/L and AST of 283 IU/L) and pancreatitis with lipase of 722 U/L. His right upper quadrant ultrasound showed no evidence of cholelithiasis. Further workup was negative for blood alcohol level, varicella zoster virus, herpes simplex virus, autoimmune hepatitis, hemochromatosis, and Wilson's disease.

Magnetic resonance cholangiopancreatography did not show any filling defects in the bile ducts. Liver biopsy showed steatosis, necrosis, and eosinophilic infiltrates (Figures 1 and 2). These findings were non-specific, but suggestive of drug-induced liver injury. On further inquiry, the patient revealed taking Hydroxycut over the preceding three weeks. He was advised to stop taking Hydroxycut and his AST and ALT normalized in 6 to 8 weeks.

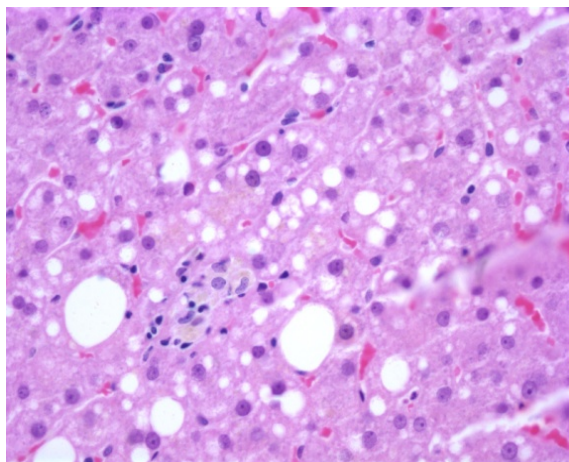


Figure 1. Liver biopsy showing steatosis.

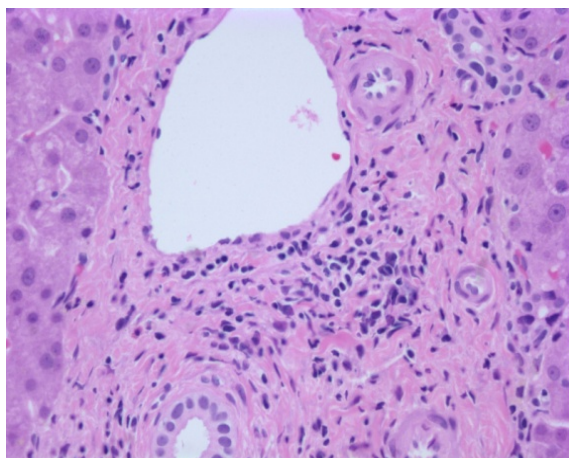


Figure 2. Liver biopsy showing intact portal triad and eosinophilic infiltration.

### Discussion

Hydroxycut is an herbal dietary supplement used for weight loss. Hepatotoxicity is a well-established side

effect of Hydroxycut. The exact incidence of Hydroxycut induced hepatitis is unknown with over 23 cases reported in literature to our knowledge.<sup>3-4</sup> Other rare but recognized side effects of Hydroxycut, such as atrial fibrillation, also have been reported in the literature.<sup>5</sup> However, to our knowledge, this case is the first reported patient with both hepatitis and pancreatitis induced by Hydroxycut.

Our patient's biopsy showed mixed hepatocellular and cholestatic liver injury. However, liver injury is nonspecific and can be of either pattern.<sup>6</sup> The temporal relationship of exposure to the offending agent and resolution of symptoms is the most reliable marker for the diagnosis of drug-induced hepatitis. As in most of the reported cases with Hydroxycut, the liver function tests improve after drug cessation. Our patient did not have evidence of gallstones or positive blood alcohol level on admission and was not taking any medications known to cause acute pancreatitis other than Hydroxycut.<sup>7-10</sup> Our case was unique in that the patient presented with both hepatitis and pancreatitis.

Due to the increasing use of alternative medicines, it is important that they are safe. We encourage further investigation of the ingredients of Hydroxycut and similar weight loss supplements to avoid adverse outcomes and establish a safety profile.

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