Case of the Month:
May's Diagnosis
Porphyria Cutanea Tarda

by Thomas T. Provost, MD

Porphyria cutanea tarda is one of the inherited and acquired porphyrias with prominent cutaneous manifestations. The other forms of porphyria with prominent cutaneous features are erythropoietic porphyria, hereditary coproporphyria, and erythropoietic protoporphyria.

Porphyria cutanea tarda has 2 forms. The most common (80% to 90%) is sporadic or acquired. The other form, accounting for 10% to 15% of cases, is hereditary. Decreased uroporphyrinogen decarboxylase activity is detected in both forms.

It has long been known that certain chemicals — notably, alcohol and estrogens — are capable of inducing porphyria cutanea tarda in some individuals. However, the exact mechanism for how these drugs induce porphyria cutanea tarda is unknown. Other chemicals (ie, hexachlorobenzene and tetrachlorodibenzo-p-dioxin) are also capable of inducing porphyria cutanea tarda.[1]

Most recent studies indicate that the most common cause of sporadic porphyria cutanea tarda in the United States is associated with hepatitis C virus (HCV).[2] It should be noted, however, that the frequency of HCV in patients with porphyria cutanea tarda varies. In Spain, France, and Italy, as many as 90% of patients with sporadic porphyria cutanea tarda have been seen in association with HCV infection.[3] In Germany, however, one study of porphyria cutanea tarda patients indicated that only 8% tested positive for hepatitis C. In addition, there is some evidence that hepatitis B and perhaps the human immunodeficiency virus (HIV) infection may be of etiologic significance in some cases of porphyria cutanea tarda.[4] The exact mechanism for how these viral infections induce porphyria cutanea tarda is unknown.

The cutaneous manifestations of porphyria cutanea tarda include vesicular and bulla formation over the extensor surfaces of the hands.[5] The lesions are induced by minor trauma, and they heal with crust and multiple small areas of milia residually. In addition, these patients may demonstrate hyper- and hypopigmentation, especially over the malar eminences. These pigmentary changes are frequently associated with hirsutism. The hirsutism is prominent in the temples, cheeks, and periorbital areas. An erythematous suffusion involving the central portion of the face may also be seen. Approximately 10% to 15% of patients may demonstrate yellowish to white plaques resembling porphyria or scleroderma.

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Diagnosis

In addition to the very characteristic cutaneous features of increased fragility, blister formation of the hands, milia, and hirsutism, porphyria cutanea tarda patients demonstrate increased quantities of uroporphyrins in their urine. Elevated coproporphyrin levels are also detected, but to a much lesser extent.[6]

Excretion of porphyrin varies in 24-hour stool samples. Porphyrin content of the stool consists primarily of isocoproporphyrin. Uroporphyrin and coproporphyrin levels are less notable. Excessive iron stores, characterized by increased serum transferrin saturation and increased ferritin levels, and hepatocellular iron concentrations are detected.

Therapy

Because of the increased serum and hepatocellular iron concentrations, phlebotomies weekly or biweekly have been found to be a very effective form of therapy.[1] At each visit, approximately 500 mL of blood is drawn until the hemoglobulin reaches approximately 10 g/dL, and the serum iron approaches approximately 50 µg per dL.

Antimalarial drugs (chloroquine and hydrochloroquine) have also been shown to be effective in treating some patients with porphyria cutanea tarda. Chloroquine 125 mg twice weekly has been shown to be a most successful form of therapy. Higher dosages of chloroquine can result in severe hepatoxicity, resulting in alarming increases in hepatic enzymes.

Recent evidence indicates that patients with porphyria cutanea tarda who respond to antimalarials possess the wild type of the hemochromatosis gene.[7] Patients with porphyria cutanea tarda but having a resistance to antimalarial therapy have been shown to be homozygous for the hemochromatosis gene. It has also been shown that patients who also have hepatitis C infection may undergo a resolution of their porphyria cutanea tarda when interferon-alpha successfully treats their hepatitis C. At the present time however, phlebotomies, together with the elimination of such environmental toxins as alcohol and estrogens, are the therapy of choice for patients with porphyria cutanea tarda.

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