Oral Contraception Woes: Idiosyncratic Drug Induced Liver Injury

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Oral Contraception Woes: Idiosyncratic Drug Induced Liver Injury

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BACKGROUND

• Idiosyncratic drug-induced liver injury (DILI) is one of the most common causes of acute liver failure in the United States.
• The clinical manifestations of DILI can range from asymptomatic liver test abnormalities to prolonged jaundice or overt acute liver failure.
• Oral contraceptives (OCCs) are associated with DILI; however modern OCCs have not been known to cause liver transaminase elevations at rates any higher than placebo.
• We report a case of a patient who presents with jaundice and elevated transaminases one week after starting OCCs.

CASE PRESENTATION

• A 29-year old female of Indian origin presented to her primary care physician’s office with complaints of fatigue and pruritus.
• Laboratory workup revealed elevated liver function test results (Table 1).
• History was negative for any coexisting medical disorders, alcohol or illicit drug use.
• Family history was positive for cholestasis of pregnancy in her mother and sister.
• The patient reported taking OCCs (norethindrone acetate and ethinyl estradiol) one week prior to the onset of her symptoms.
• Further evaluation showed a negative serologic workup for chronic liver disease including viral hepatitis and autoimmune disease.
• Imaging was normal.
• She underwent a liver biopsy that showed minimal active hepatocellular damage and mild cholestasis. (Images 1 and 2)
• The patient’s symptoms and jaundice were attributed to OCCs.
• Her OCCs were discontinued resulting in significant improvement in her symptoms and complete normalization of her liver function tests (Table 2).

DISCUSSION

• The pathophysiology of OCCs associated DILI has been related to bile salt transporter mutations and is similar to that of cholestasis of pregnancy.
• Interestingly, this patient’s family history was positive for cholestasis of pregnancy.
• Our patient has never been pregnant, but has plans to become pregnant in the future.
• She was advised that she is at increased risk of developing cholestasis of pregnancy.
• Our case report illustrates the importance of obtaining a thorough history as it has the implications of the cause of DILI as well as guidance for the future.

REFERENCES

3. livertox.org

TABLE 1: LIVER FUNCTION TESTS ON OCCS

<table>
<thead>
<tr>
<th>Component</th>
<th>Values</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Bilirubin</td>
<td>3.6</td>
<td>3.5 mg/dl</td>
</tr>
<tr>
<td>ALP</td>
<td>102</td>
<td>92 U/L</td>
</tr>
<tr>
<td>AST</td>
<td>152</td>
<td>257 U/L</td>
</tr>
<tr>
<td>ALT</td>
<td>237</td>
<td>378 U/L</td>
</tr>
</tbody>
</table>

TABLE 2: TREND OF LIVER FUNCTION TESTS AFTER DISCONTINUING THE OCCS

<table>
<thead>
<tr>
<th>Time</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 5</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Bilirubin</td>
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<td>5.2</td>
<td>3.2</td>
<td>0.6</td>
<td>mg/dl</td>
</tr>
<tr>
<td>ALP</td>
<td>104</td>
<td>127</td>
<td>151</td>
<td>71</td>
<td>U/L</td>
</tr>
<tr>
<td>AST</td>
<td>388</td>
<td>100</td>
<td>63</td>
<td>16</td>
<td>U/L</td>
</tr>
<tr>
<td>ALT</td>
<td>621</td>
<td>320</td>
<td>140</td>
<td>20</td>
<td>U/L</td>
</tr>
</tbody>
</table>

Images 1 and 2: Histopathology showing minimal active hepatocellular damage, mild cholestasis and focal minimal portal fibrosis.