disease exacerbation, including decompensation. Delaying conception until liver disease is well controlled on stable doses of immunosuppressants for at least 1 year is suggested.
- Counseling regarding the potential risks of azathioprine and 6-mercaptopurine (6-MP) is recommended, although these drugs are considered safe in pregnancy and lactation.
- Prednisone and budesonide are considered low risk in pregnancy and lactation.
- MPA products are contraindicated in pregnancy and lactation.
- Liver test monitoring during each trimester is suggested. More frequent monitoring (every 2-4 weeks) is advised for the first 6 months postpartum.
- Breastfeeding is not contraindicated.

CHRONIC CHOLESTATIC LIVER DISEASES

Primary Biliary Cholangitis

Approximately one third of new diagnoses of PBC are made during pregnancy.[186] Because PBC may be associated with elevated total serum bile acids, measurement in the first trimester can help with interpretation of bile acid levels later when superimposed ICP may be a concern. Data regarding fertility and maternal pregnancy outcomes are limited, with no differences compared with non-PBC controls.[187,188] During pregnancy, up to 70% of women with PBC have stable or improved liver tests, but increased liver disease activity occurs in 60% to 70% postpartum.[186,188] Immunoglobulin M levels and M2 antibody titers may decline in pregnancy but return to baseline levels postpartum.[189] *De novo* onset or worsening of pruritus during pregnancy occurs in approximately 50% of women.[186,188] For management of pruritus, cholestyramine, rifampin, or S-adenosyl-L-methionine (SAMe) may be added to ursodeoxycholic acid (UDCA) (Table 4).[190,191] Cholestasis may lead to vitamin K deficiency and increased risk of bleeding.[192] Cholestyramine may exacerbate vitamin K deficiency[193] in persons with cholestasis, with rare case reports of associated hypoprothrombinemia and even hemorrhage.[194-196] Onset varied from 2 weeks to 8 months and responded promptly to parental vitamin K supplementation.[193-196]

Rates of fetal or neonatal complications may be higher in women with PBC compared to healthy controls, although the presence of cirrhosis confounds interpretation of available data.[187,188] UDCA in pregnancy and breastfeeding is not associated with adverse effects.[186-188] Obeticholic acid is not associated with teratogenicity or postnatal abnormalities in animal studies, but human data are lacking. Fibrates were not associated with teratogenic or embryonic risks in animals but adversely affected maternal reproductive outcomes at high doses.[197,198] Whether obeticholic acid and fibrates are excreted in breast milk is unknown.[198,199] Due to the lack of sufficient safety data, neither obeticholic acid nor fibrates are recommended during pregnancy and lactation.

Primary Sclerosing Cholangitis

Women with primary sclerosing cholangitis (PSC) often have inflammatory bowel disease (IBD), and many women will need concurrent management of liver and bowel disease during pregnancy. Published experience with PSC in pregnancy is limited, and interpretation of outcomes is complicated by a lack of adjustment for IBD. Fertility is not affected by PSC.[200] A Swedish study comparing 229 pregnant women with PSC to 2.3 million non-PSC controls identified higher rates of preterm births (16.3% vs. 5.1%) and cesarean delivery (29.4% vs. 13.3%), but no differences were seen in small for gestational age, stillbirths, or neonatal deaths.[201] Smaller studies reported preterm births in 10% to 30%.[200,202,203] IBD, especially if active at the time of conception or during pregnancy, contributes to higher rates of fetal and neonatal complications.[204]

De novo pruritus and abdominal pain are the most frequently reported symptoms during pregnancy.[202] Most women have stable liver tests, but up to one-third have increased liver tests postpartum, although without clinical consequences.[200] Pregnant women on UDCA appear more likely to have stable liver enzymes than those who are not on UDCA (13% vs. 67%),[200] although UDCA is not FDA-approved for PSC treatment due to unconfirmed efficacy.[205]

For new symptoms or worsening liver tests during pregnancy, the development of a dominant stricture should be considered. US is the initial imaging test of choice, with use of cross-sectional studies or