In this thesis, we focused on the management of four different types of benign liver tumors: hepatocellular adenoma, focal nodular hyperplasia, hepatic angiomyolipoma and biliary cystadenoma. For hepatocellular adenoma (HCA), guidelines advise cessation of oral contraceptives and surgical resection if the lesion is still >5cm six months after diagnosis. In this thesis we have showed that this six month interval is insufficient to expect regression to ≤5cm in large HCA and that it should be prolonged to at least 12 months. Continuing on this, we developed a model to predict regression of large HCA. We also addressed the management of hepatocellular adenoma <5cm during pregnancy and showed that pregnancy bares minimal risks when the lesion is followed closely with regular ultrasound follow-up.

Another subject addressed in this thesis, is the implication of growth for the management of focal nodular hyperplasia (FNH). We concluded that growth is not uncommon and should not have any implications on clinical management if confident diagnosis by imaging has been established.

For hepatic angiomyolipoma (HAML), we have suggested that a diagnostic biopsy should be performed when HAML diagnosis is considered on cross sectional imaging. In case of certain HAML diagnosis, conservative management with annual imaging is justified. Resection should be considered in case of symptoms, inconclusive biopsy or growth during follow-up.

We addressed the management of biliary cystadenoma in a systematic review and concluded that due to the difficulty in accurately diagnosing these biliary cystic lesions and the availability of different surgical approaches, patients with suspected biliary cystadenoma should be treated in a center specialized in liver surgery with state-of-the-art imaging and all surgical techniques.